

September 24, 2019 Project No. 180070E001

Issaquah School District 5150 220th Avenue SE Issaquah, Washington 98029

Attention: Mr. Tom Mullins

Subject: Landslide Hazard Assessment

Issaquah High School #4 and Elementary School #17

4221 228th Avenue SE Issaquah, Washington

Dear Mr. Mullins:

We are pleased to present the findings of the landslide hazard assessment completed for the subject project. This report has been prepared for the exclusive use of the Issaquah School District, and their authorized agents, for specific application to this project. No other warranty, express or implied, is made.

SITE AND PROJECT DESCRIPTION

The subject site is comprised of three parcels totaling approximately 40 acres located at 4441, 4443, and 4461 228th Avenue SE in Issaquah, Washington (King County Parcel Nos. 1624069001, 1624069029, and 1624069031). The location of the site is shown on the "Vicinity Map," Figure 1.

As shown on Figure 2, a relatively flat to gently sloping plateau is located in the central portion of the property. From this plateau, the topography generally slopes down toward the northeast, east, south, and southwest. Elevations on the property range from a low of approximately 415 feet near the northeastern corner of the site to a maximum of approximately 526 feet in the southern portion of the site. Slope inclinations on the flanks of the plateau are generally about 30 percent or less, but steepen to approximately 40 to 50 percent over a maximum height of approximately 30 feet near the southeast corner of the property. This area classifies as a Steep Slope Hazard Area under the *Issaquah Municipal Code* (IMC). The central portion of the property was previously developed with a church, dormitories, and accessory buildings. These structures were demolished in early 2019. Grading associated with the demolition has resulted in some localized areas of steep slopes in the areas of the former structures. Maximum slope inclinations in these areas were visually estimated to be up to approximately 2H:1V (Horizontal:Vertical).

The central plateau area, including the area of the demolished buildings, generally consists of bare or sparsely vegetated ground with some scattered trees and areas of asphalt pavement. The remainder of the site generally consists of mixed coniferous/deciduous forest with some access roads. A water tank is located in a forested area near the south end of the plateau. The locations of the former buildings and other prominent site features are shown on the 2017 aerial photo included as Figure 2. The topographic contours included on Figure 2 are based on Light Detection and Ranging (LIDAR) data and are representative of conditions prior to building demolition.

Based on review of civil plan sheets prepared by AHBL, dated May 20, 2019, we understand that preliminary development plans for the site consist of a new high school and elementary school. The high school and elementary school buildings will be located in the southern and western portions of the site, respectively. The high school will have a football field and track, baseball and softball fields, tennis courts above a parking structure, surface parking, and space for future portable classrooms. The elementary school will have play areas, surface parking, and space for future portable classrooms. The proposed facility layout is shown in Figure 3.

Maximum cuts for the project will be up to approximately 17 to 18 feet and will be located in the southern portion of the site in the area of the proposed high school building. A maximum fill depth of approximately 41 feet will be located in the northeastern portion of the site in the area of the proposed baseball field. We understand that conceptual plans include the use of mechanically stabilized earth (MSE) walls to facilitate proposed grade changes in some areas.

SUBSURFACE EXPLORATION

Our field study included advancing 31 exploration pits and 12 exploration borings at the site. This information was supplemented by 20 additional exploration pits completed at the site for previous geotechnical studies by Terra Associates, Inc. (Terra) in July 2015 and by Earth Solutions NW (ESNW) in May 2014. These exploration logs were included in a report titled "Geotechnical Report, Madison Pointe," prepared by Terra for Murray Franklyn Companies, Project No. T7252, dated March 18, 2016. A copy of the Terra report was provided to us by the District. It should be noted that the log of ESNW exploration pit TP-2 was not included in the Terra report. The approximate locations of the explorations are shown on Figures 2 and 3. The conclusions and recommendations presented in our report are based on the explorations completed for this study. The number, locations, and depths of our explorations were completed within site and budgetary constraints. Copies of the exploration logs are included in Appendix A.

Because of the nature of exploratory work below ground, extrapolation of subsurface conditions between field explorations is necessary. It should be noted that subsurface conditions between the explorations may differ from those inferred by the boring data due to the random nature of deposition and the alteration of topography by past grading and/or filling. The nature and extent of any variations between the field explorations may not become fully evident until construction. If

variations are observed at that time, it may be necessary to re-evaluate specific recommendations in this report and make appropriate changes.

Exploration Pits

The exploration pits were excavated using a track-mounted excavator. The pits permitted direct, visual observation of subsurface conditions. Materials encountered in the exploration pits were studied and classified in the field by an engineering geologist from our firm. All of the exploration pits were backfilled immediately after examination and logging. Samples collected from the exploration pits were classified in the field and representative portions placed in watertight containers. The samples were then transported to our laboratory for further visual classification and laboratory testing.

Exploration Borings

The exploration borings drilled for our study were completed using a track-mounted, hollow-stem auger drill rig. During the drilling process, samples were generally obtained at 2.5- to 5-foot-depth intervals. The exploration borings were continuously observed and logged by an engineering geologist from our firm. The exploration logs presented in Appendix A are based on the field logs, drilling action, and review of the samples collected.

Disturbed, but representative samples were obtained by using the Standard Penetration Test (SPT) procedure in accordance with *American Society for Testing and Materials* (ASTM) D-1586. This test and sampling method consists of driving a standard 2-inch, outside-diameter, split-barrel sampler a distance of 18 inches into the soil with a 140-pound hammer free-falling a distance of 30 inches. The number of blows for each 6-inch interval is recorded, and the number of blows required to drive the sampler the final 12 inches is known as the Standard Penetration Resistance ("N") or blow count. If a total of 50 is recorded within one 6-inch interval, the blow count is recorded as the number of blows for the corresponding number of inches of penetration. The resistance, or N-value, provides a measure of the relative density of granular soils or the relative consistency of cohesive soils; these values are plotted on the boring logs in Appendix A.

The samples obtained from the split-barrel sampler were classified in the field and representative portions placed in watertight containers. The samples were then transported to our laboratory for further visual classification.

Stratigraphy

Detailed descriptions of the sediments encountered in each of the borings are provided on the exploration logs in Appendix A. The explorations generally encountered natural sediments consisting of granular, glacial sediments underlain by weathered sedimentary rock. Fine-grained glacial sediments and/or glacially consolidated non-glacial sediments were also encountered in some locations. In some areas of the site, the natural deposits were overlain by fill soils. The

following section presents more detailed subsurface information organized from the shallowest (youngest) to the deepest (oldest) sediment types.

Fill

Fill soils (those not naturally deposited) were encountered in 11 of the explorations at the site. Where encountered, the existing fill generally consisted of loose to dense, gravelly, silty to very silty sand. Portions of the fill contained trace to abundant quantities of wood debris. In general, the areas where existing fill soils were encountered were located near the former buildings, pavement areas, and property margins. Where encountered in our explorations, the existing fill soils ranged in thickness from approximately 1 to 9 feet. The thicknesses of the existing fill soils encountered in the explorations are summarized in Table 1.

Table 1
Summary of Observed Fill Thicknesses

Exploration	Fill Thickness (feet)
EP-7	1
EP-8	8
EP-9	1
EP-11	6
EP-16	4
EP-18	2
EB-4	2.5
EB-8	4.5
EB-9	2.5
TP-6 (Terra, 2015)	1
TP-5 (ESNW, 2014)	9

Forest Duff/Topsoil

A surficial forest duff/topsoil horizon was encountered in most of our explorations located outside of areas of existing fill or asphalt pavement. Where encountered in our explorations, the thickness of the forest duff/topsoil horizon generally ranged from approximately 2 to 8 inches. Organic topsoil thicknesses shown on the Terra and ESNW exploration logs generally ranged from approximately 6 inches to 2 feet.

Vashon Lodgement Till

With the exception of exploration pit EP-4, the natural sediments encountered in our exploration pits either directly below the ground surface, the surficial topsoil horizon, or the surficial fill layer generally consisted of loose to medium dense, non-stratified, silty to very silty, gravelly sand with

scattered cobbles. These sediments typically became dense to very dense below depths ranging from approximately 6 inches to 6 feet. We interpret these sediments to be representative of Vashon lodgement till. The Vashon lodgement till was deposited directly from basal, debris-laden, glacial ice during the Vashon Stade of the Fraser Glaciation, approximately 12,500 to 15,000 years ago. The high relative density characteristic of the Vashon lodgement till is due to its consolidation by the massive weight of the glacial ice from which it was deposited. The reduced density observed in the upper portion of the till is interpreted to be due to weathering.

Lodgement till sediments were also encountered in the upper portions of exploration borings EB-1, EB-2, EB-5 through EB-9, EB-11, and EB-12, and appear to have been encountered in all of the ESNW and Terra exploration pits except Terra pit TP-6. The Terra and ESNW exploration logs do not consistently identify the geologic units encountered. However, in their report, Terra describes these sediments as consisting of lodgement till. At the locations of exploration borings EB-5, EB-8, EB-11, and EB-12, and in Terra pits TP-4, TP-5, and TP-8, the till extended to depths ranging from approximately 2 to 28 feet. Where encountered elsewhere in the explorations, the till extended beyond the maximum depths explored of approximately 4.5 to 15.5 feet. Exploration borings EB-1, EB-2, and EB-7 met with driller refusal in the till at depths of approximately 10 to 15.5 feet. In addition to cobbles, lodgement till typically contains scattered boulders and the difficult drilling conditions encountered at these locations are likely due to the presence of boulders and/or clusters of cobbles in the till.

Vashon Ice Contact Sediments

Sediments encountered below the weathered till horizon in boring EB-12, approximately 2 feet below the ground surface, generally consisted of stiff to very stiff, fine sandy silt with trace to some gravel. We interpret these sediments to be representative of material deposited by meltwater in close proximity to the glacial ice during Vashon time. At the location of boring EB-12, the ice contact sediments extended to a depth of approximately 14.5 feet.

Olympia Non-Glacial Sediments

Sediments encountered at a depth of approximately 28 feet (below the Vashon lodgement till) in boring EB-11 generally consisted of very dense, tan-gray, fine to medium sand with moderate to high silt content. Below a depth of approximately 33.5 feet, the sediments of this geologic unit consisted of hard, tan silt with trace gravel. The silt was generally massive but contained scattered, thin, sandy lenses. Although we observed no clear, distinguishing features characteristic of a particular geologic unit, their color, gradation, and stratigraphic position below the lodgement till suggest that these sediments may be representative of material deposited during the Olympia non-glacial period. The Olympia non-glacial period occurred prior to the Fraser Glaciation, approximately 30,000 to 60,000 years ago. At the location of exploration boring EB-11, these sediments extended to a depth of approximately 48 feet.

Possession Drift

Sediments encountered below the Vashon lodgement till in boring EB-8 generally consisted of very stiff to hard, blue-gray silt. The silt was generally massive to laminated and contained scattered fine sand partings. These sediments effervesced in hydrochloric acid. We interpret these sediments to be representative of Possession Drift. The Possession Drift was deposited in a glaciomarine environment during the Possession Glaciation, approximately 60,000 to 80,000 years ago. At the location of boring EB-8, the Possession Drift extended beyond the maximum depth explored of approximately 26.5 feet.

Pre-Fraser Till

Sediments encountered below a depth of approximately 48 feet in boring EB-11 generally consisted of very dense, non-stratified, very silty, gravelly sand. Although these sediments appeared texturally similar to the Vashon lodgement till, their stratigraphic position below the suspected Olympia-aged non-glacial sediments indicate that they were deposited during a glacial period prior to the Fraser Glaciation. At the location of boring EB-11, the pre-Fraser till extended to a depth of approximately 68 feet.

Pre-Fraser Silt

Sediments encountered below the pre-Fraser till in boring EB-11 (below a depth of approximately 68 feet) generally consisted of hard silt with lenses and interbeds of very silty, fine sand. Based on their stratigraphic position below the pre-Fraser silt, deposition of these sediments also occurred prior to the Fraser Glaciation. These sediments were non-reactive in hydrochloric acid. At the location of boring EB-11, the pre-Fraser silt extended to a depth of approximately 80 feet.

Blakely Harbor Formation

Sediments encountered below the surficial topsoil horizon in exploration pit EP-4 consisted of loose, brown, very silty sand with some gravel and soft to medium stiff, yellowish-tan silt. These sediments became medium dense to dense below a depth of approximately 5.5 feet. The gravel-sized fraction of these sediments typically consisted of angular sedimentary rock. Similar sediments were encountered either directly below the surficial topsoil horizon, or below the lodgement till or pre-Fraser sediments in exploration borings EB-3 through EB-6, and EB-10 through EB-12. We interpret these sediments to be representative of the Blakely Harbor Formation. The Blakely Harbor Formation consists of a Miocene-aged sedimentary rock composed of sandstone, siltstone, conglomerate, tuff, and volcaniclastic sandstone. It is known to contain interbeds of coal, and in some locations, nearly coherent logs. Where encountered in our explorations, the bedrock was typically weathered and poorly lithified and exhibited physical characteristics more consistent with a non-lithified sediment than well indurated bedrock. However, the density/lithification of these sediments typically increased with depth. Sedimentary

rock is also noted on the exploration logs for Terra pits TP-4 through TP-6, and TP-8. At these locations, the bedrock was encountered at depths ranging from approximately 2.5 to 9 feet.

Exploration borings EB-4 through EB-6, EB-10, and EB-12 met with refusal in the bedrock at depths ranging from approximately 12 to 20 feet. Refusal depths and elevations for these boring locations are summarized below in Table 2. It should be noted that the refusal elevations shown in Table 2 were estimated from the LIDAR based topography shown on Figure 2. The elevations shown in Table 2 should be considered accurate to the degree implied by the methods used to estimate them.

Table 2 Summary of Drilling Refusal Depths in the Blakely Harbor Formation Bedrock

Boring Number	Depth to Drilling Refusal (feet)	Apx. Drilling Refusal Elevation (feet)
EB-4	20	494
EB-5	14	506
EB-6	12	508
EB-10	20	445
EB-12	18	487

Geologic Map Review

Review of the regional geologic map titled Geologic Map of the Issaquah 7.5' Quadrangle, King County, Washington, by Booth and Minard (1992) indicates that the area of the site is underlain by Vashon lodgement till with Tertiary sedimentary rock mapped in portions of the southern and eastern parts of the site. Our interpretation of the sediments encountered in our explorations is consistent with the regional geologic map.

Hydrology

Slow to moderately rapid groundwater seepage was observed in 11 of the Associated Earth Sciences, Inc. (AESI) exploration pits. Seepage was also noted on three of the ESNW pits. Specifically, groundwater seepage was encountered in AESI exploration pits EP-4, EP-6, EP-10, EP-11, EP-13 through EP-15, EP-18, EP-19, EP-21, and EP-31, and in ESNW pits TP-1, TP-3, and TP-4. Generally, the seepage was limited to a thin, perched zone in the lower portion of the weathered till horizon within 4 feet of the ground surface. Similarly, shallow, perched seepage was encountered on the surface of the bedrock in exploration pit EP-4. This perched seepage, known as "interflow" occurs when stormwater infiltrates through the relatively permeable, weathered soil horizon and becomes perched atop the underlying, dense, low permeability, unweathered till or bedrock. Accumulation of interflow is typically a seasonal phenomenon. The exploration data indicates that the interflow is not laterally continuous across the site, but rather is limited to

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relatively small isolated areas. Deeper perched seepage was encountered in exploration pit EP-6. At this location, the seepage was limited to a thin, perched zone in the unweathered till at a depth of approximately 7 feet. The occurrence or level of seepage below the site likely varies in response to changes in season, precipitation, and other factors.

LANDSLIDE HAZARDS AND RECOMMENDED MITIGATION

Slope inclinations on the site are generally about 30 percent or less, but steepen to approximately 40 to 50 percent over a maximum height of approximately 30 feet in a relatively small area located near the southeast corner of the property. Based on the morphology of the topography in this area, we interpret the steep slope to be a cut slope made for the construction of 228th Avenue SE and the south entrance road into the property.

Section 18.10.390 of the IMC defines Steep Slope Hazard Areas as any ground that rises at an inclination of 40 percent or more within a vertical elevation change of at least 10 feet. Section 18.10.580 of the IMC states that a buffer shall be established at a horizontal distance of 50 feet from the top, toe, and sides of Steep Slope Hazard Areas with an additional 15-foot building setback established from the edge of the buffer. The buffer may be reduced to a minimum of 10 feet upon acceptance by the City of a geotechnical study supporting the buffer reduction. Alteration of steep slopes are generally prohibited under the code with limited alterations allowed for trails, utilities, and surface water conveyance. The City may grant an exemption from the prohibition of steep slope alteration under the following conditions:

- 1. Where the height of a steep slope is 20 feet or less. In this case, an alteration may be granted upon review and acceptance by the City of a soils report prepared by a geologist or licensed geotechnical engineer demonstrating that no adverse impact will result from the exemption.
- 2. Where the slope has been created from previous legal grading activities. In this case, any remaining steep slope shall be subject to the protection mechanisms for steep slopes specified in the code.

Steep slope protection mechanisms specified in Section 18.10.580 of the IMC include a factor of safety of at least 1.5.

Review of the May 20, 2019 grading plans prepared by AHBL civil engineers indicates that the project will entail some grading of the steep slopes. A copy of the grading plan prepared for this area is shown in Figure 4. As previously stated, we interpret the steep slopes to consist of cut slopes associated with grading for construction of 228th Avenue SE and the entrance road into the property off of 228th Avenue SE. Consequently, alteration of these slopes is allowed under Section 18.10580D of the IMC, subject to the protection mechanisms specified in the code.

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Slope Reconnaissance

We completed a reconnaissance of the steep slopes at the site at the time of our field exploration. During our reconnaissance of these areas, we did not observe any geomorphologic indications of historic landslide activity, such as tension cracks, landslide scarps, or hummocky topography. No emergent seepage or unusually deformed tree trunks indicative of historical or ongoing slope movement were observed.

LIDAR Mapping

LIDAR based imagery is a remote sensing technology that can be used to generate a detailed expression of ground surface topography even in densely vegetated areas. For this reason, LIDAR based topographic imagery can be helpful in distinguishing surface features (such as old landslide features) that may otherwise not be easily recognizable. A LIDAR based shaded relief map of the subject site is included as Figure 5. We did not observe any indications of historic landslide activity during our review of the LIDAR shaded relief map.

Slope Stability Analysis

An analysis of the global stability of the slope in the southeast corner of the site was conducted using the computer program SLOPE/W, version 7.23 by GeoSlope International. The program used the Morgenstern-Price method for evaluating a rotational failure. Input parameters for the analysis included slope geometry, geology, and soil strength parameters. The slope geometry used for our analysis was based on the topography depicted on the civil grading plan along section lines A-A' and B-B' (Figure 4). These sections extend through the steepest and highest portions of the slope. The following cases were analyzed for each of these two sections:

- Existing topographic conditions, static case.
- Existing topographic conditions, seismic case.
- Post-construction (post-grading) conditions, static case.
- Post-construction conditions, seismic case.

Subsurface exploration in this area indicates that the slope is underlain by bedrock with Vashon lodgement till overlying the bedrock in most areas. Because the shear strength of the bedrock is estimated to be equivalent to or stronger than the lodgement till, we conservatively assumed that the native sediments underlying the slope consist entirely of lodgement till. Soil strength parameters used for our analysis were assumed based on typical published values for lodgement till and our prior experience. The soil strength parameters used for our analysis are shown on the SLOPE/W profiles included in Appendix B. For evaluation of slope stability under seismic conditions, a horizontal ground acceleration of 0.26g was used for our analysis. This value is equivalent to ½ of the peak horizontal ground acceleration based on a seismic event with

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a 2 percent probability of exceedance in 50 years in accordance with the 2015 International Building Code (IBC).

The stability of a slope can be expressed in terms of its factor of safety. The factor of safety of a slope is the ratio between the forces that resist sliding to the forces that drive sliding. For example, a factor of safety of 1.0 would indicate a slope where the driving forces and the resisting forces are exactly equal. Increasing factor of safety values greater than 1.0 indicate increased stability. Factors of safety below 1.0 indicate conditions where the driving forces exceed the resisting forces and landsliding is imminent.

Under static conditions, the minimum calculated factors of safety all exceeded the minimum value of 1.5 specified in the IMC. The IMC does not specify a minimum factor of safety for seismic conditions, but as a typical standard of practice, a factor of safety of 1.1 is generally considered to be a minimum acceptable value. The minimum factors of safety calculated for seismic conditions all exceeded a factor of safety of 1.5. The minimum calculated factors of safety are summarized below in Table 3. Copies of the results of the slope stability analysis are included in Appendix B.

Table 3 **Summary of Minimum Calculated Factors of Safety**

Section Line	Case	Minimum Factor of Safety
A-A'	Existing Static	2.43
A-A'	Existing Seismic	1.52
A-A'	Post-Construction Static	3.69
A-A'	Post-Construction Seismic	2.13
B-B'	Existing Static	2.64
B-B'	Existing Seismic	1.62
B-B'	Post-Construction Static	2.65
B-B'	Post-Construction Seismic	1.61

Landslide Hazard Mitigation

Based on our observations and analyses, it is our opinion that the risk of damage to the proposed project by landsliding on the steep slope is low under both static and seismic conditions, with minimum calculated factors of safety exceeding the minimum acceptable value specified in the IMC. This opinion assumes that construction practices for the project will be completed in accordance with the recommendations presented in this report. We recommend that stormwater discharge on or adjacent to the top of the steep slope be avoided as it could increase the potential for accelerated erosion and negatively impact the stability of the slope.

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As previously discussed, some areas of steep slope were generated during grading associated with the demolition of the former buildings. Post-demolition topography is not included on the project grading plans and, therefore, these steep slopes are not shown. However, the current grading plans indicate that grading proposed for the project will eliminate any steep slopes resulting from the demolition activities. At the time this report was prepared, development plans for the project were conceptual. We recommend that AESI review the final plans to verify that they comply with our recommendations.

We appreciate this opportunity to be of continued service to you with your project. Should you have any questions, please contact us at your convenience.

Sincerely,

ASSOCIATED EARTH SCIENCES, INC.

Kirkland, Washington

Senior Geologist

Stephen A. Siebert, P.E.

Associate Geotechnical Engineer

Senior Principal Engineer

Attachments: Figure 1: Vicinity Map

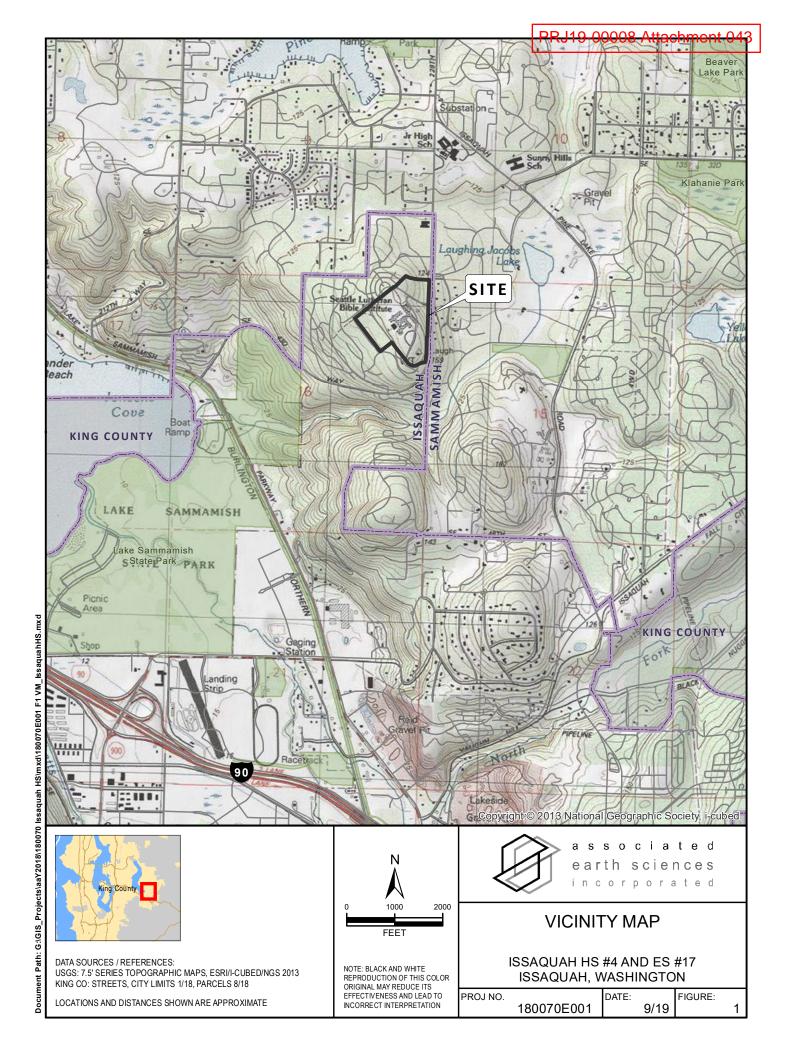
> Figure 2: 2017 Aerial, LIDAR Based Contours

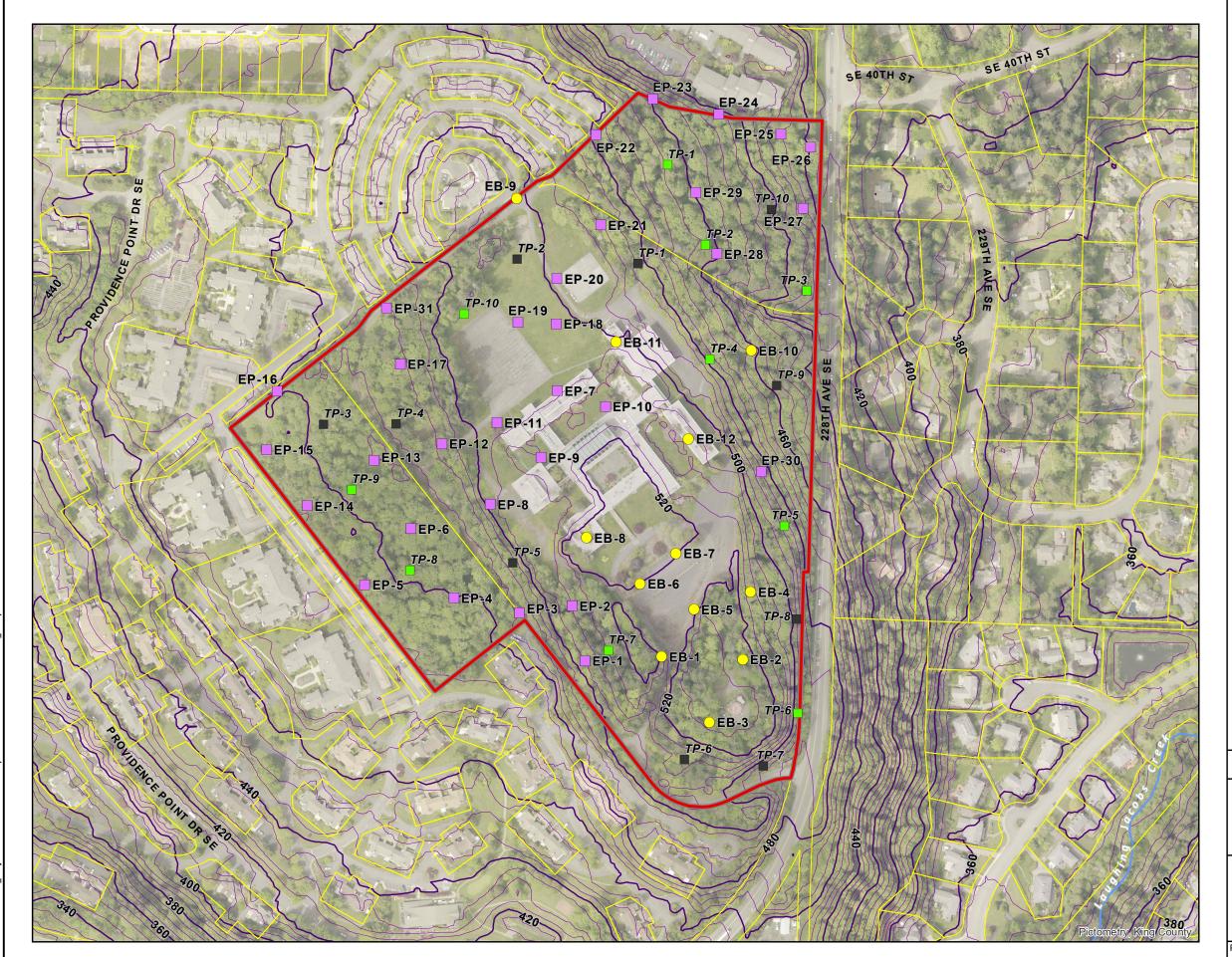
Figure 3: Site and Exploration Plan

Figure 4: **Steep Slope Areas**

Figure 5: LIDAR Shaded Relief Map

Appendix A: Exploration Logs Appendix B: SLOPE/W Profiles





SITE

EXPLORATION BORING

EXPLORATION PIT

TEST PIT BY EARTH SOLUTIONS

TEST PIT BY TERRA ASSOCIATES INC., 2015

PARCEL

CONTOUR 20 FT

○ CONTOUR 5 FT

IMAGE TAKEN PRIOR TO DEMOLITION OF EXISTING STRUCTURES.

DEMO IN PROCESS DEC. 2018 AND DONE BY JUNE

DATA SOURCES / REFERENCES: PSLC: KING COUNTY 2016, GRID CELL SIZE IS 3'.

PSLC: KING COUNTY ZUID, UNID VELL SIZE 15 3.

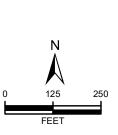
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CONTOURS FROM LIDAY

KING CO: STREETS, 1/19, PARCELS 4/19, AERIAL PICTOMETRY INT. 2017 TEST PITS FROM: "GEOTECHNICAL REPORT MADISON POINTE", BY TERRA ASSOCIATES 11/14/2018

LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE





BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION

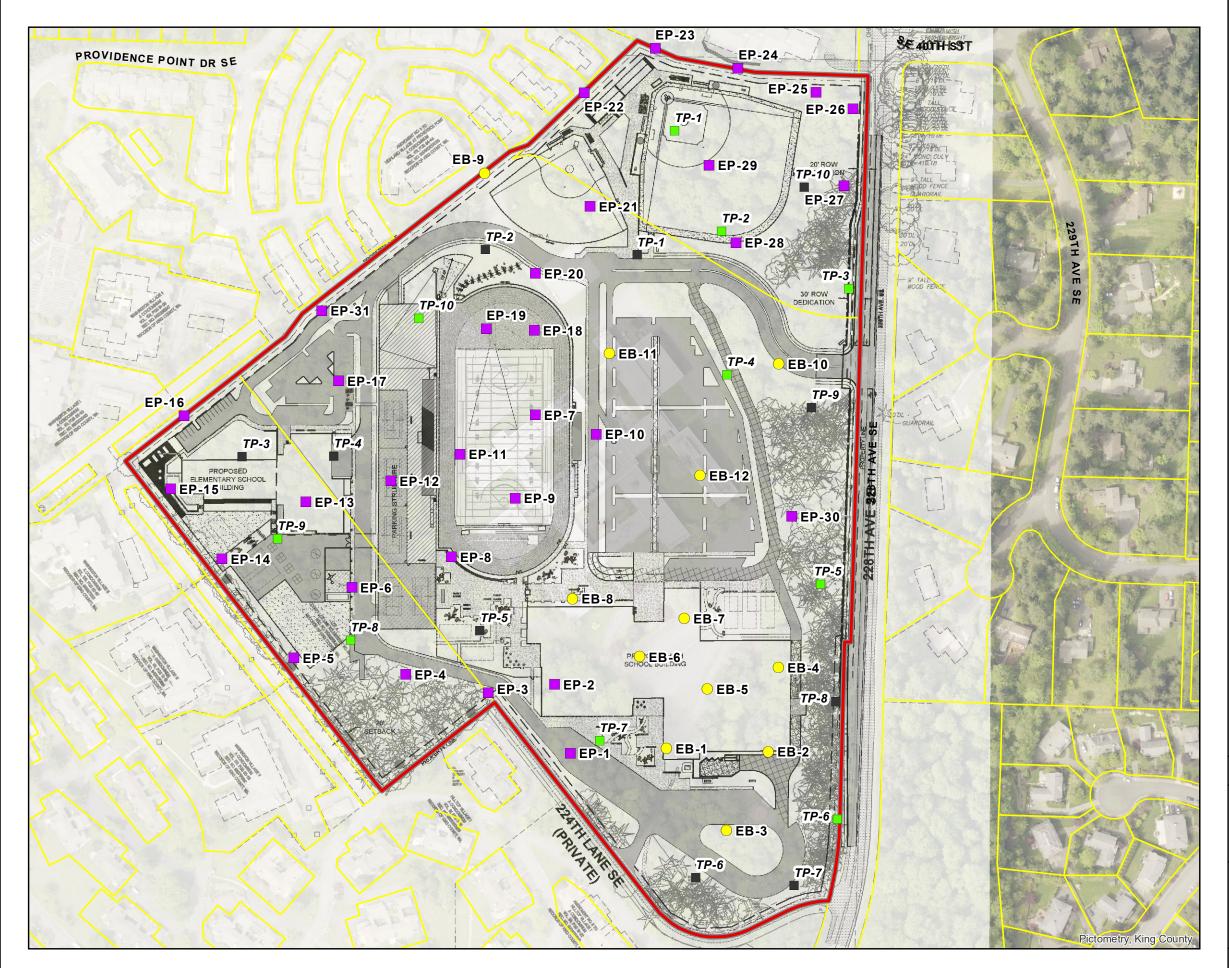


earth sciences

2017 AERIAL LIDAR BASED CONTOURS

ISSAQUAH HS #4 AND ES #17 ISSAQUAH, WASHINGTON

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SITE

EXPLORATION BORING

EXPLORATION PIT

TEST PIT BY EARTH SOLUTIONS

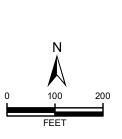
TEST PIT BY TERRA ASSOCIATES INC., 2015

PARCEL

DATA SOURCES / REFERENCES: SITE PLAN: ABHL, ELEMENTARY SCHOOL SITE, ISDHS CHECK SET C7.0, 1/31/19 KING CO: STREETS, 1/19, PARCELS 4/19, AERIAL PICTOMETRY INT. 2017 TEST PITS FROM: "GEOTECHNICAL REPORT MADISON POINTE", BY TERRA ASSOCIATES 11/14/2018

LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE





BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION

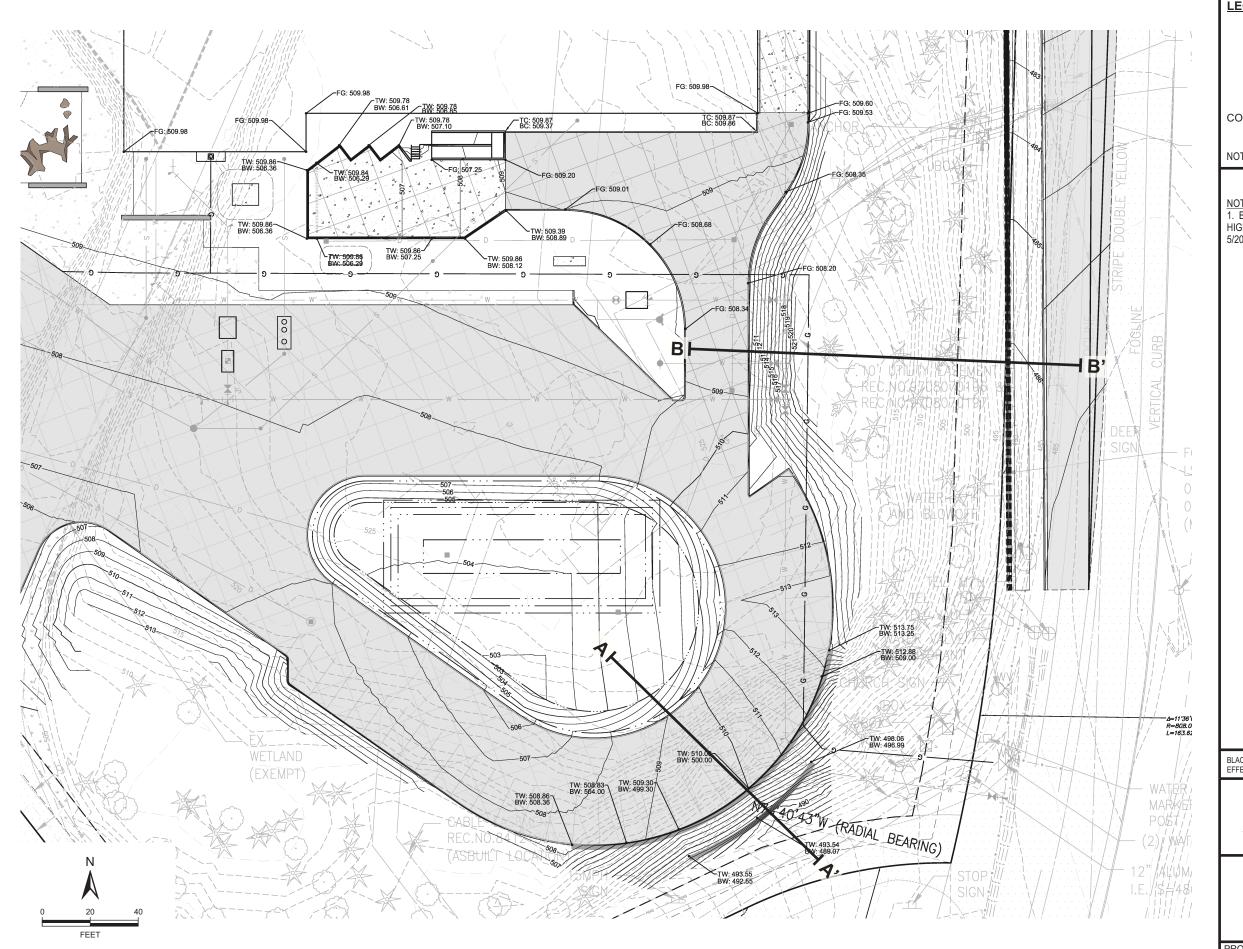


associated earth sciences

SITE AND EXPLORATION PLAN

ISSAQUAH HS #4 AND ES #17 ISSAQUAH, WASHINGTON

PROJ NO. DATE: FIGURE: 3

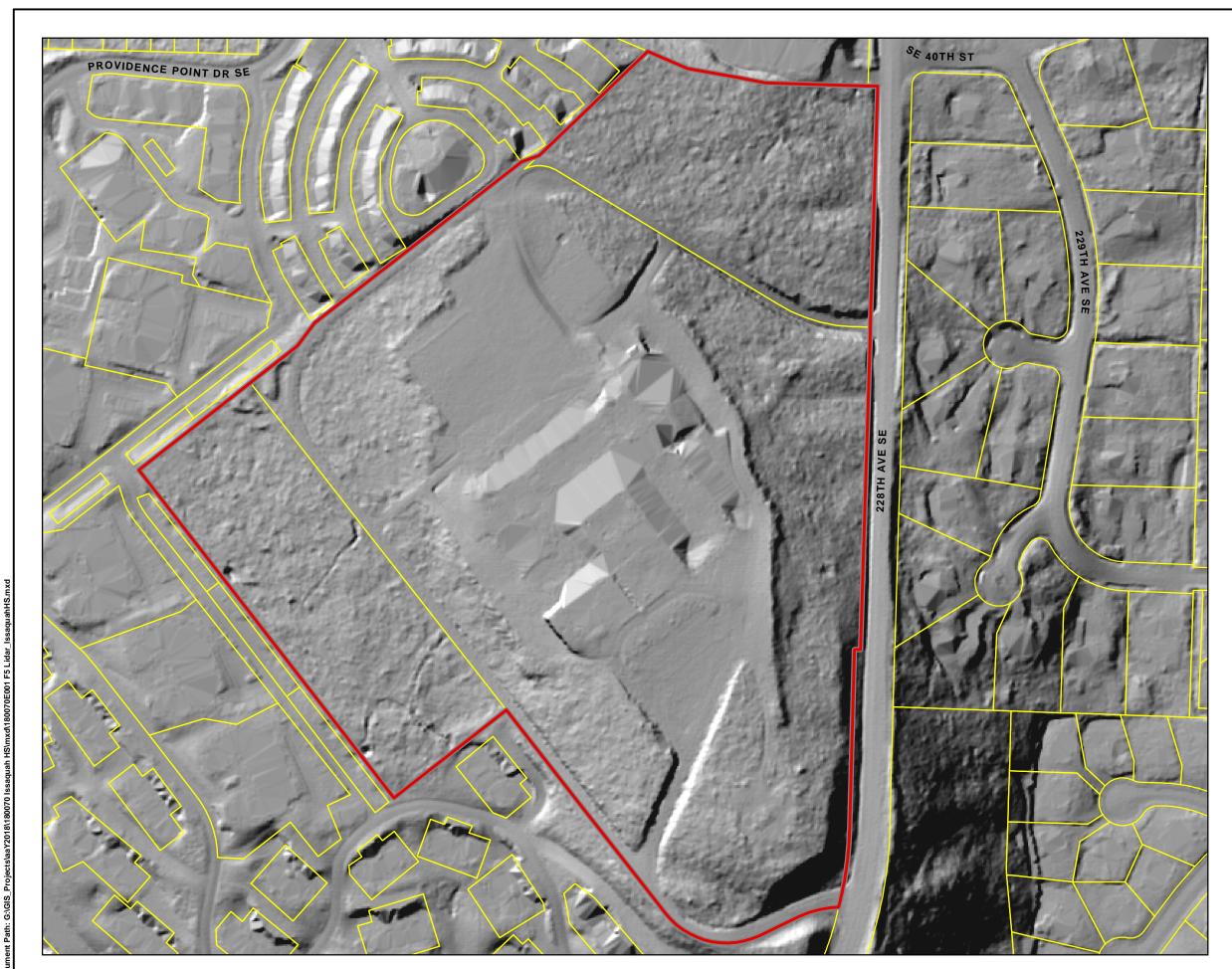


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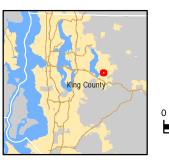


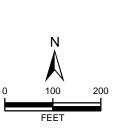
SITE

PARCEL

DATA SOURCES / REFERENCES: SITE PLAN: ABHL, ELEMENTARY SCHOOL SITE, ISDHS CHECK SET C7.0, 1/31/19 KING CO: STREETS, 1/19, PARCELS 4/19, AERIAL PICTOMETRY INT. 2017

LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE





BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION



LIDAR SHADED RELIEF MAP

ISSAQUAH HS #4 AND ES #17 ISSAQUAH, WASHINGTON

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APPENDIX A

Exploration Logs

Classifications of soils in this report are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D-2487 and D-2488 were used as an identification guide for the Unified Soil Classification System.



	3	> a		ciated sciences	Project Number	Exploration Exploration Nu	Bor	m	g	9-00	008	Atta	cnrr	ient	043
\ll	2			porated	180070E001	Exploration Nu EB-1	imber					1 0			
Project		me			S #4 and ES #17				Surf	ace El			_ 52	20	
∟ocatio Driller/l	Equ	ipme	nt	Issaquah, V Advance Dr	illing Technology / Track Rig		Datun Date :	Sta			_6/2	VD 8 5/19,	8 6/25	/19	
Hamm	er V	Veigh	nt/Drop	140# / 30 in	ches		Hole I	Dia	met	er (in)	_7				
Depth (ft)	S	Samples	Graphic Symbol		DESCRIPTION		Well Completion	Water Level	Blows/6"	10		vs/Fc	oot 40		Ottoo Tageto
	Ħ				Asphalt - 3.5 inches		\neq								
		S-1		Moist, grayish t	Vashon Lodgement Till an, gravelly, very silty, SAND; nonstra	atified (SM).			16 21 12			4	▲33		
		S-2		Becomes mottl	ed; some gravel.				7 14 19			4	▲33		
5	H			Contains a lens	of gray silt at 5 to 6 feet.				6						
	Ц	S-3		Becomes very	moist and gravelly below 6 feet.				12 23				▲35		
				Refusal on a ro	ck at 7.5 feet. Moved over 2.5 feet an	d resumed drilling.									
10		S-4		Becomes gray.					19 22 18				•	40	
									18						
15		S-5						5	50/4"						50/4"
			1.1.	Bottom of explora No groundwater e	tion boring at 15.5 feet due to refusal. ncountered.										30,7
20															
- 25															
Sa	_ `	-	/pe (ST): Spoon Sampler (SPT) No Recovery M	- Moisture						_ogge	d by:	TJI	 P

	\gtrsim	1		ciated		Exploration	Bor	沿	ig	9-00	800	Atta	chm	ent 0	43
\forall	2			sciences porated	Project Number 180070E001	Exploration Nu EB-2	mber					She	eet of 1		
Project		me		Issaquah H	S #4 and ES #17				Sur	face E	levatio		_524	4	_
Locatio Driller/E	Equ	ipme	nt	Issaquah, V Advance Dr	illing Technology / Track Rig		Datur Date		art/F	inish		VD 8 5/19	38 ,6/25/	19	
Hamme	er V	Veigh	nt/Drop	140# / 30 in	ches		Hole	Dia	ame	ter (in)	7_		,		_
Depth (ft)	S	Samples	Graphic Symbol		DESCRIPTION		Well Completion	Water Level	Blows/6"	40		vs/Fo			0+00 T 204+0
-	\mathbf{H}		7, 18. 7,		Forest Duff - 4 inches				Н	10	20	30	40		+
		S-1		Moist, reddish	Vashon Lodgement Till prown, gravelly, very silty, SAND (SM).			6 8 12		A 2	20			
- 5		S-2 S-3		Becomes tan. Blowcounts are	· likely overstated, pounding on a rocl	с.			6 14 14 30/4	,		▲ 2i	8	\$ 50	0/4"
				Difficult drilling.											
- 10 -		S-4		Bottom of explora	ed and very gravelly. tion boring at 11 feet due to refusal. ncountered. t and attempted to re-drill. Met refusal at 7.5	feet.		į	20 30/5'					\$ 50)/5"
- - 15															
- 20															
- 25															
Sai		2" OE 3" OE		Spoon Sampler (Spoon Sampler (l	=	- Moisture Water Level () Water Level at time of	of drillin	na (ATE))		_ogge Appro	d by: ved by:	TJP CJK	

	*		ociated h sciences	Project Number	Exploration Exploration Nu	Bor	in	g	9-000	U8 A	Sheet	IIIIe	11 04
\ll			orporated	180070E001	EB-3	iiiibei					1 of		
roject N ocation		ie	<u>Issaquah H</u> Issaquah, V	S #4 and ES #17		Grou Datur		Surf	face Elev			525	
riller/Ec	quip	ment	Advance D	rilling Technology / Track Rig		Date	Sta		inish _.	NAV 6/25	/19,6/	25/1	9
ammer	· W€	eight/Dro	p <u>140# / 30 ir</u>	iches		Hole	Dia —	met	er (in)	7			
Depth (ft)	S T	Samples Graphic Symbol	5	DESCRIPTION		Well Completion	Water Level	Blows/6"	I	Blows	s/Foot	t	F. out
		. Z ₄ 1 ^K .	<u> </u>	Forest Duff / Topsoil - 6 inche					10	20	30	40	
	s	S-1		Blakely Harbor Formation				2 5	★ 10	,			
Н	Ч		Moist, mottled	light brown, very silty, SAND, trace to	some gravel (SM).			5					
	5	6-2						8 8 11		19			
5	s	6-3						6 9 13		▲ 2	2		
10		S-4	Becomes very	moist.				7 11 19			♣ 30		
15	S	S-5	Trace fine grav	el.				6 9 30				▲ 39	
20	s	3-6	Becomes tan g fragments.	ray with heavy orange brown mottling	յ. Contains coal			12 13 22			•	35	
25		S-7	Becomes grave Bottom of explora No groundwater e	ation boring at 26 feet			5	28 50/5"					\$ 50/5"

				o ciate d sciences	Project Number	Exploration Exploration Nu	Borii	<u>ig</u>	ສ-ບບ 	υυδ	Sheet	ment	. 04	-
<				rporated	180070E001	EB-4					1 of 1			_
Project Location	on			Issaguah, V	S #4 and ES #17 VA		Ground Datum				n (ft) VD 88_	514		_
Driller/ Hamm			ent ht/Drop	Advance Dr	filling Technology / Track Rig		Date St Hole Di			6/2	5/19,6/	25/19		_
	Т								()					_
(ft)		seles	phic bol				Well Completion	Blows/6"		Blov	vs/Foot			Poete
Depth (ft)	S	Samples	Graphic Symbol				Well omple	Blow		Diov	V 0/1 000			Other T
1	ľ	0,			DESCRIPTION		ΰ́́		10	20	30	40		Č
		S-1		Very moist, red	Fill dish brown, very silty, gravelly, SANE	D; nonstratified (SM).		5 4	4 9	,				
				-				5						
-	\parallel	-			Blakely Harbor Formation		_							
-		S-2		Verv moist red	-	SAND: gravel fraction		2 2 3	▲ 5					
_				consists of ang	dish brown, gravelly, very silty, fine S ular sandstone fragments (SM).	, ave, graver nacaem								
- 5				Dagamas tan a	ad ailte			4						
_		S-3		Becomes tan a	nd Siity.			5 13		18	3			
_														
_														
-														
- 10				Contains angul	ar gray gravel; poor recovery.			21 50						
-	Н	S-4		, and the second				50 50/6'				1	5 0/6	,,
-														
-														
-														
– 15								20						
_		S-5						38 50/3'				1	5 0/3	"
_														
_														
20		S-6		Becomes gray	and more lithified.			50/5					50/5	
- 20			' '		tion boring at 20 feet due to refusal.								20,0	
=				<u> </u>										
-														
-														
-														
- 25														
L														
=														
_														
-														
Sa	 amr	l oler T	ype (S1											_
_		2" OI	O Split	Spoon Sampler (· · · · · · · · · · · · · · · · · · ·	- Moisture					_ogged b	-		
	-04			Spoon Sampler (I		Water Level ()	of drilling	(Δ ΤΓ))	,	Approved	l by : CJ	JK	
Ŋ	VZI	Grah	Sampl	Δ	Shelby Tube Sample ▼	. vvalci Levei al liiile (or utiliffig	∖∕∕∖IL	,,					

	\overline{a}	1		ciated		Exploration	Bor	inc	19-00	0008 /	Attach	ment	043
\forall	2			sciences porated	Project Number 180070E001	Exploration Nu EB-5	mber				Sheet 1 of 1		
Project Locatio		me		Issaquah H	S #4 and ES #17		Grour		ırface E	levation	` ' —	520	
Oriller/E	Equ	ipme	nt	Issaquah, V Advance Di	rilling Technology / Track Rig		Date :	Start	/Finish	_6/25	/D 88 /19,6/2	25/19	
Hamm	er V	Veigh	nt/Drop	140# / 30 in	ches		Hole I	Diam	eter (in	7			
Depth (ft)	S	Samples	Graphic Symbol		DESCRIPTION		Well Completion	Water Level	10		s/Foot	10	C+00+C
	Ħ				Asphalt - 1.5 inches thick Vashon Lodgement Till		7						
		S-1		Moist, brown, v	ery gravelly, very silty, SAND; rounde	ed gravel (SM).		18 19	9l l			★	50/6"
	Н				Blakely Harbor Formation			50/	6"				
		S-2		Moist, gray, silt	y, SAND; contains angular rock fragn	nents (SM).		22 38 50/	3			 	^ 50/6"
5		S-3		Orange brown	mottling.			28 33 50/	3 3 3"			†	^50 /3"
10		S-4		Becomes more	heavily mottled.			18 50/	3 4"			•	\$ 50/4"
	H	S-5		Rottom of evolors	tion boring at 14 feet due to refusal.			50/	4"				50/4"
5				No groundwater e	encountered.								
20													
25													
Sa	2	2" OE		T): Spoon Sampler (Spoon Sampler (- Moisture Water Level ()		<u> </u>			ogged by		

	3	a		ciated sciences	Project Number	Exploration Exploration Nu	Bor	ir	ıg	ສ - ບບ	υυδ	Sh	aCHIII	ent (J4v
\triangleleft	2			porated	180070E001	Exploration Nu EB-6		_					of 1		
Project		me		Issaquah H	S #4 and ES #17				Sur	face El			_ 52	20	
_ocatio Driller/l	Equ	ipme	nt	Issaquah, V Advance Dr	illing Technology / Track Rig		Datur Date		art/F	inish		VD 8	38 ,6/26	/19	
Hamm	er V	Veigh	t/Drop	140# / 30 in	ches		Hole	Dia	me	ter (in)	7_		,		
Depth (ft)	S	Samples	Graphic Symbol		DESCRIPTION		Well	Water Level	Blows/6"	10		ws/F			
				\	Asphalt - 2 inches		\overline{A}								+
		S-1		Moist, grayish t	Vashon Lodgement Till an, gravelly, very silty, SAND; nonsti	ratified (SM).			8 10 15			▲ 25			
		S-2		Some gravel.					12 21 27					A 48	3
5		S-3		Trace gravel; c sand.	ontains scattered thin lenses (<1/8 in	iches thick) of fine			18 11 18			A :	29		
10	I	S-4		Gravelly drilling	Blakely Harbor Formation at 9 feet.	ngular rock fragments	_	į	50/6'					A 5	50/6"
	П	S-5		(SM).	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	J. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		į	46 30/3'	.				A 5	50/3"
15				No groundwäter e	ncountered.										
20															
25															
Sa 		2" OE 3" OE		Spoon Sampler (Spoon Sampler (l	D & M) $\overline{\blacksquare}$ Ring Sample $\overline{\square}$	I - Moisture Z Water Level () Z Water Level at time o	f drilli-	 	<u> </u>				ed by: oved by	TJP	

	?	1		ciated	Decidat Number	Exploration	Bor	ľ	g	9- 00	UUB	Alla	:nmei	nt O	#\\
\forall	2			sciences porated	Project Number 180070E001	Exploration Nu EB-7	ımber					Shee 1 o	et		
Project		me		Issaquah H	S #4 and ES #17				Sur	face El	levatio		520		_
∟ocatio Oriller/E	Ξqu	ipmeı	nt	Issaquah, V Advance Di	illing Technology / Track Rig		Datum Date S	Sta			_6/2	VD 8 6/19.	8 6/26/19	9	_
-lamme	er V	Veigh	t/Drop	140# / 30 in	ches		Hole [Dia	me	ter (in)	7_				_
Depth (ft)	S	Samples	Graphic Symbol		DESCRIPTION		Well Completion	Water Level	Blows/6"	40		vs/Fo			Othor Toote
				<u> </u>	Asphalt - 2.5 inches		7			10	20	30	40	+	+
		S-1		Moist, grayish	Vashon Lodgement Till an, gravelly, very silty, SAND; nonstr	atified (SM).			8 6 10		▲ 16				
5		S-2							10 18 0/5'	,				50/	5"
		S-3		Poor recovery, Very difficullt d	-			5	25 30/5'					50/	5"
		S-4		Becomes yello	wish tan, very gravelly.				14 46 0/5'					50/	5"
10		S-5	[· I · I ·] _		tion boring at 10 feet due to refusal. ncountered.				,0,1					\$ 50/	1"
15															
20															
20															
25															
20															
Sa] 2	2" OD): Spoon Sampler (Spoon Sampler (=	- Moisture Water Level ()		•	, 1			Logged	l by: ed by:	TJP	

Ĺ		* e	s s d	sciences	Project Number	Exploration Exploration Nu	Bori umber	ng	9-00	1008 7	Sheet	irnet	it U4
~	2		n c o	rporated	180070E001	EB-8					1 of	1	
Project Location	on			Issaguah, V	S #4 and ES #17 VA		Datum			levation NA\	/D 88	520	
Driller/ Hamm	Έqυ ner V	uipme Neigh	nt nt/Drop	Advance Di 140# / 30 in	<u> illing Technology / Track Rig</u>		Date Solution			6/26	6/19,6	/26/19)
Depth (ft)	S		Graphic Symbol		DESCRIPTION			Water Level Blows/6"		Blow	rs/Foo		
	\forall				Fill			1	10	20	30	40	
		S-1		Moist, tan, grav	elly, very silty, SAND (SM).			1 2 2	A 4				
		S-2		Trace tile debri	s.			3 3 4	▲ 7				
5					Vashon Lodgement Till								
		S-3		Moist, grayish t	an, gravelly, very silty, SAND; nonst	ratified (SM).		5 10 14		4	A 24		
- 10	T	S-4		Becomes very				14 25 36					▲ 61
- 15				-	pecomes smoother at 12 feet.								
		S-5						18 36 36					▲ 72
- 20		S-6		Becomes mottl	ed with increased moisture.			16 15				^ 35	
				Very moist, blu effervesces in l	Possession Drift e gray, SILT; contains fine sand part nydrochloric acid (ML).	ings; massive;		20					
- 25	П	S-7		Becomes lamir	nated.			9			▲ 28		
	H			Bottom of explora No groundwater e	tion boring at 26.5 feet encountered.			16					
] :	2" OE		-): Spoon Sampler (Spoon Sampler (1 - Moisture Z Water Level ()					ogged I		TJP CJK

	\sim	1		o c i a t e d sciences	5 : 10	Exploration	Bor	in	<u>119</u> -	0000	8 Atta	chme	nt 043
\leq				rporated	Project Number 180070E001	Exploration Nu EB-9	mber				She 1 c	of 1	
Project Location		ıme		Issaquah H Issaquah, V	S #4 and ES #17		Grou		Surfac	e Eleva		500	
Driller/	Εqu	iipme	ent	Advance Dr	illing Technology / Track Rig		Date	Sta		sh _6	IAVD 8 /26/19	,6/26/19)
Hamm	er V	Veigl	nt/Drop	_140# / 30 in	ches		Hole	Diar	neter	(in) _ 7			
Depth (ft)	S	Samples	Graphic Symbol		DESCRIPTION		Well Completion	Water Level	Blows/6"		ows/Fo		F. codi
_	\forall				Asphalt - 1.5 inches		/	\Box					
		S-1		Moist, grayish t scattered orgar	Fill an and brown (mixed), gravelly, very nic debris (SM).	silty, SAND; contains			12 16 11		▲27		
		S-2		Very moist, tan	Vashon Lodgement Till gray, very silty, gravelly, SAND; nor	nstratified (SM).			6 9 12		▲ 21		
- 5		S-3		Becomes tan to	o grayish tan.				8 16 24			40	
- 10 - 1		S-4		Becomes mois	t.			:	16 24 30				▲ 54
- 15	I	S-5		Becomes very	moist.			50	48 0/1"				▲ 50/1"
- 20	Ι	S-6						50	33 D/5"				♣ 50/5"
- 25 -		S-7		Poor recovery. Bottom of explora No groundwater e	tion boring at 25.5 feet ncountered.			50	0/4"				★ 50/4"
		2" O[^r): Spoon Sampler (: Spoon Sampler (!	D & M) \prod Ring Sample \sum	/I - Moisture Z Water Level () ☑ Water Level at time c					Logge Appro	d by:	TJP CJK

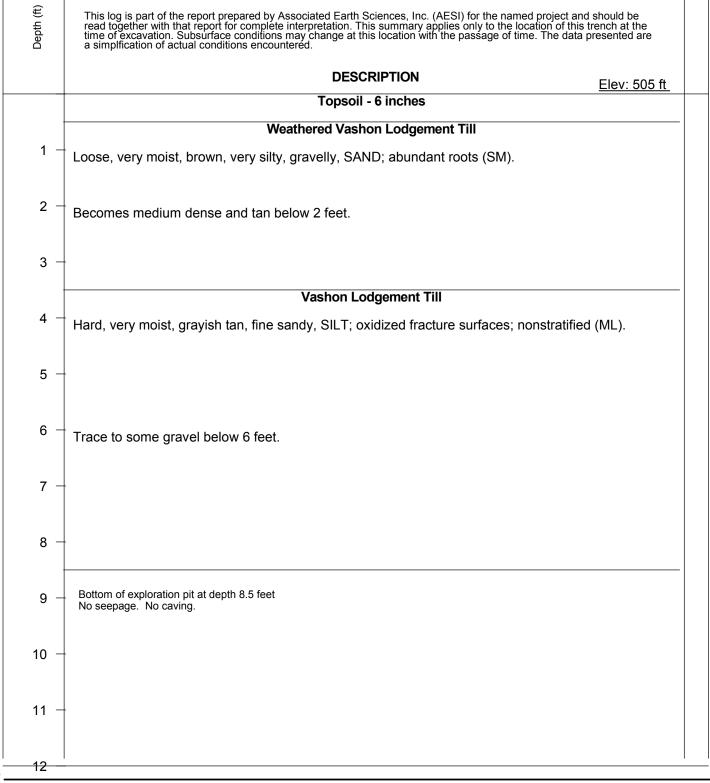
	\gtrsim	1		o c i a t e d		Exploration	Bori	ng	9-000	008 At	achr	nent	043
earth sciences incorporated				rporated	Project Number Exploration Num 180070E001 EB-10				Sheet 1 of 1				
Project I Locatior Driller/E Hamme	n Iqui	ipme	ent nt/Drop	Issaquah H Issaquah, V Advance Dr 140# / 30 in	S #4 and ES #17 VA illing Technology / Track Rig ches		Datum Date S	tart/F		NAVD 6/26/1	88	65 6/19	
Depth (ft)	S	Samples	Graphic Symbol		DESCRIPTION		Well	Water Level Blows/6"		Blows/	Foot		Other Tests
					DESCRIPTION Blakely Harbor Formation				10	20 3	30 4	0	_
_		S-1		Very moist, bro	wn to tan, very silty, gravelly, SAND	(SM).		5 5 8	4	13			
_		S-2		Becomes mois rock fragments	t, grayish tan, silty with angular grave	l sized sedimentary		9 15 18			▲33		
- 5 -		S-3		Becomes tan to	o yellowish tan.			11 15 22			▲ 3	37	
10	T	S-4		Becomes mottl present.	ed and fine grained (siltstone); angula	ar rock fragments still		50/5				•	:50/5"
15		S-5						13 29 50/5				A	·50/5"
20	==	S-6		Poor recovery. Bottom of explora No groundwater e	tion boring at 20 feet due to refusal. encountered.			50/2	,			•	50/2"
- 25													
San	2	2" O[Γ): Spoon Sampler (Spoon Sampler (I		- Moisture Water Level ()					ged by:	TJF	

				sciences	Exploration Boring Project Number Exploration Number					119-00008 Attachment 04 Sheet							
_ <			n c o	rporated	180070E001			1 of 3									
Project Location		ame		Issaguah, V	S #4 and ES #17 VA		Datum		Surface Elevation (ft)								
Driller/ Hamm			ent nt/Drop	Advance Dr	illing Technology / Track Rig		Date St Hole Dia		inish _	6/27/1 7	19,6/27	7/19					
	 T				01100			П	.0. ()								
(£)		es	hic				Well Completion	9/		Blows/	Foot		octo.				
Depth (ft)	S	Samples	Graphic Symbol				Well Completion	Blows/6"		olows/	1001		Other Test				
	ľ	S			DESCRIPTION		ပို		10	20	30 40)	Ē				
	T	S-1			Vashon Lodgement Till			6		A							
	Ш	3-1		Very moist, gra	yish tan, very silty, gravelly, SAND; n	onstratified (SM).		6 9 9		18							
- I																	
-		S-2		Becomes moist				29 50/6"				4 50	0/6"				
<u> </u>				Met with refusa	l at 4 feet; moved over 4 feet and res	umed drilling.											
- 5	\perp				,	3											
-		S-3						37				50	0/5"				
_	H							50/5"									
=																	
_																	
– 10	F	S-4		Becomes very	moist.			50/3"				\$ 50	0/3"				
-																	
-																	
-																	
-																	
– 15	L																
15	Ш	S-5		Becomes very	moist.			14 50/4"				4 50	0/4"				
Ī																	
-																	
_																	
_																	
- 20	\perp	S-6						50/6"				A 50	0/6"				
-													9				
-																	
_																	
- 25		S-7		Becomes very	moist, slightly less gravelly, and sight	ly more silty.		13				_					
-	\parallel	3-7						13 21 30				7 5	1				
_																	
_				Driller adding w	ater (~1 to 2 gallons). Olympia Nonglacial Sediments ecomes smooth below ~28 feet.	?	_										
-				Drilling action b	ecomes smooth below ~28 feet.												
0		ler T	(C)	-1.													
	_ `		ype (ST) Split :): Spoon Sampler (\$	SPT) No Recovery M	- Moisture				Lon	ged by:	TJP					
[=			Spoon Sampler (I Spoon Sampler (I		Water Level ()						y: CJK					
	***		Sampl		Shelby Tube Sample ¥		f drilling	(ATC))								

				ociated sciences	Project Number Exploration Number					9-00008 Attachment 04 Sheet							
~				rporated	180070E001 EB-11				2 of 3								
Projec Location		ame		Issaguah, V	S #4 and ES #17 /A		Ground Datum	Sur	face Ele	evation _NAV		500					
Driller/			ent ht/Drop	Advance Dr	illing Technology / Track Rig		Date St Hole Di			6/27	/19,6/2	7/19					
T IGITIII	.c.	TVC.g.	Т	<u>140# / 00 III</u>					(111)								
(ft)		es	hic				Well Completion			Plow	s/Foot		9				
Depth (ft)	S	Samples	Graphic Symbol				Well Completion	Blows/6"		DIOWS	5/1001		Other Tee				
	ľ	S			DESCRIPTION		ပြ		10	20	30 4	0	ŧ				
	Ī	S-8		Moist, tan gray,	fine to medium SAND, some silt (SF	P-SM).		18									
-	Ц	3-0						30 41					71				
-		S-9			tan, silty, and fine grained.			27 39					50/6"				
_	Ш			Moist, tan, SILT	; nonplastic; massive; driller adding	water (ML).		50/6"									
- 35	H																
		S-10)					11 37				 	50/5"				
								50/5"									
	\perp	S-11						27 50/6"									
	Ц	3-1		Trace gravel.				50/6"				1	50/6"				
- 40	Т			0	/ O in the set thinks of the the constituted of	in a namely silk at 10.5		20									
		S-12	<u>-</u>	feet.	(~3 inches thick) of lightly mottled, f	ine sandy, slit at ~40.5		20 39 50				1	50/6"				
_																	
-																	
- 45																	
_		S-13	3					12 20					53				
	Ш							33									
				Gravelly drilling	Pre-Fraser Till action at 48 feet.												
_				Cravelly arming	action at 40 lect.												
- 50	П			Moist, grayish t	an, very silty, gravelly, SAND; nonstr	atified (SM).		20									
		S-14						20 32 48				1	80				
_																	
-																	
– 55	L																
		S-15	5	Slight increase Becomes very	in moisture content. moist and gray.			12 33				A ,	50/5"				
	Ш							33 50/5"									
_																	
_																	
Sa	 amp	l oler T		<u>Ι</u> Γ):													
		2" OI	O Split	Spoon Sampler (S		- Moisture					gged by						
				Spoon Sampler (I		Water Level ()	£ -1	/ A -		Αp	proved	pa: Cl	K				
ı 1	"5	Grah	Sampl	Δ	Shelby Tube Sample ¥	. vvater Level at time o	ı arıllıng	(A I L))								

		1	earth	sciences	Project Number Exploration Number				9-00008 Attachment 04						
Projec	t NI	Incorporated								Elevation	3 of 3	500			
Location Driller	on		ent	Issaguah, V	VA illing Technology / Track Rig		Datum Date S	1		_NA\	/D 88				
				140# / 30 in	ches				eter (in) _7	7/19,6/2	7/19	_		
Depth (ft)	S	Samples	Graphic Symbol		DESCRIPTION						Blows/Foot				
_		S-10						1:	3	0 20	30 4	10	FO/G!		
-				Driller adding v	rater.			3: 50/	3 6"				50/6"		
- 65		S-1	7					11 2: 2:	6 2 7			A 4	19		
-				Drilling action b	Pre-Fraser Silt ecomes smooth below 68 feet.										
- 70 - -		S-18	3	Moist, mottled at 71 feet; non-	an, SILT; nonplastic; contains thin sar reactive in hydrochloric acid (ML).	nd lens (~1 inch thick)		1 ² 24	7			•	67		
- - 75 - -		S-19		Moist, grayish thick) of silt (Sf	an, very silty, fine SAND; frequent thir //).	n lenses (~2 inches		1(2 4(7			•	73		
- - 80 - -	I	S-20)		Blakely Harbor Formation action at 80 feet. y silty, gravelly, SAND; nonstratified (SM).		50/	6"			•	50/6"		
- - 85 -		S-2			nish gray, very gravelly, and contains p tion boring at 85.75 feet ncountered.	oink rock fragments.	_	44 50/				•	50 /3"		
Sa		2" O 3" O		Spoon Sampler (Spoon Sampler (_ · · · <u>=</u> · · · · · · · · · · · · · · · · · · ·	- Moisture Water Level () Water Level at time o	drilling	a (A	[D)		ogged by pproved				

	>	4		o ciate d		Exploration	Borir	ig	9-000	08 A	tach	ment	043
inco				Project Number Exploration Nu EB-12		mber		Sheet 1 of 1					
Project I Locatior Driller/E Hamme	n Equi	pmeı		Issaquah, V Advance Dr	illing Technology / Track Rid	1	Ground Datum Date Sta Hole Dia	art/F	inish	vation (f NAVI 6/28/ 7	88 (505 28/19	
Depth (ft)	S	Samples	Graphic Symbol		DESCRIPTION		Water Level	Blows/6"		Blows		10	Other Tests
		S-1		Very moist, mo	Vashon Lodgement Till ttled tan, very silty, gravelly, SAND;	nonstratified (SM).		5 9	10	20 A 18	30 4	10	
		S-2		Very moist, mo	Vashon Ice Contact ttled tan, fine sandy, SILT, some gr	avel; nonplastic (ML).	_	9 4 5 6	▲ 1	1			
- 5		S-3		Trace to some	gravel.			4 6 10		▲ 16			
- 10 - 		S-4		No gravel. Becomes blue	gray below 11 feet.			5 10 15		•	25		
- 15		S-5		Moist, purplish	Blakely Harbor Formation action below 14.5 feet. gray, silty, fine SAND, trace organic	es (SM).		15 41 50/4"					5 0/4"
- 20		S-6		pebble gravel.	tion boring at 18 feet due to refusal.	g.aca		50/5"					50/5"
- 25													
San	mple	er Ty	pe (ST	- <u>-</u>):									
] 2	" OD " OD	Split 9	Spoon Sampler (S Spoon Sampler (I	O & M) Ring Sample	M - Moisture ☑ Water Level () ☑ Water Level at time o	f drilling ((ATE))		ged by proved	r: TJ	



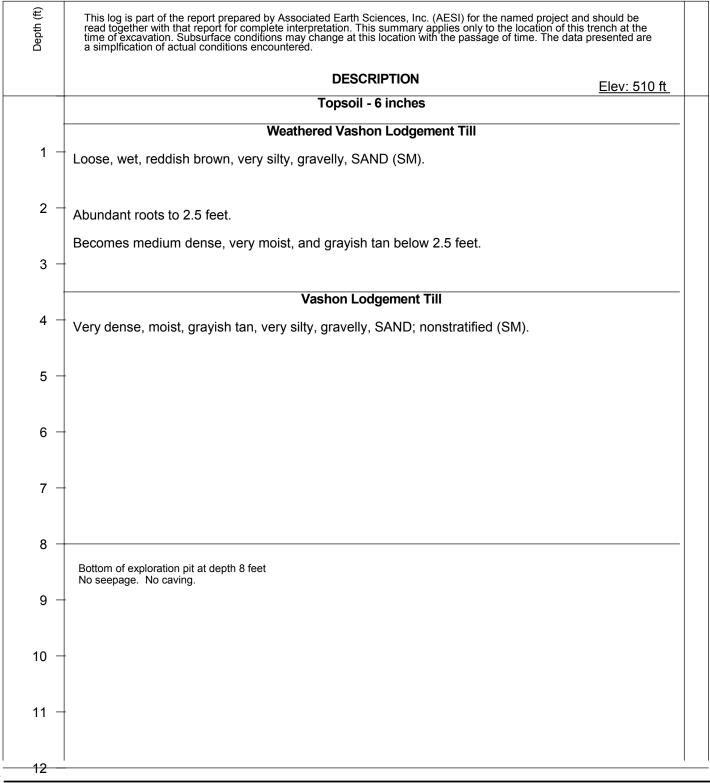
Issaquah HS #4 and ES #17 Issaquah, WA

Logged by: TJP
Approved by: CJK



Project No. 180070E001

12/12/18



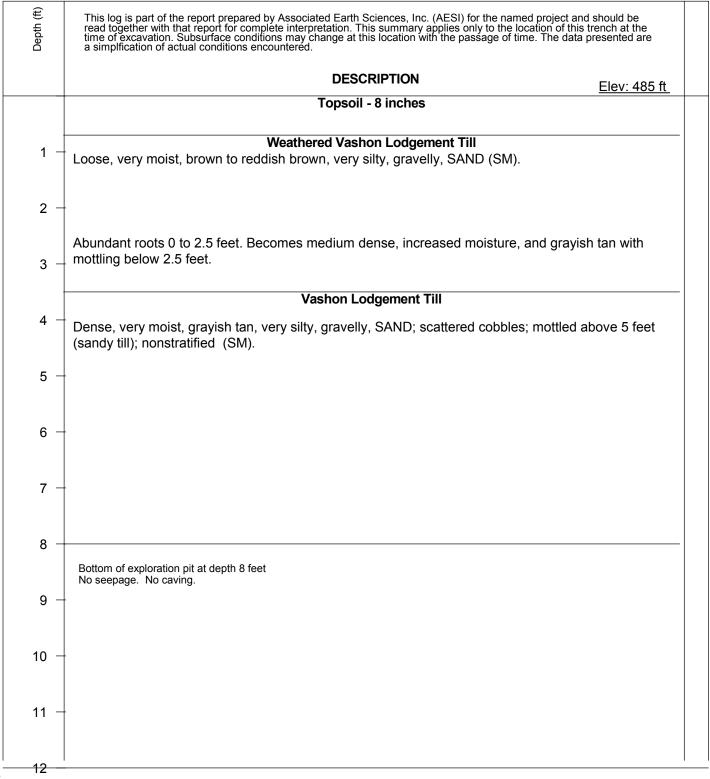
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Project No. 180070E001

12/12/18



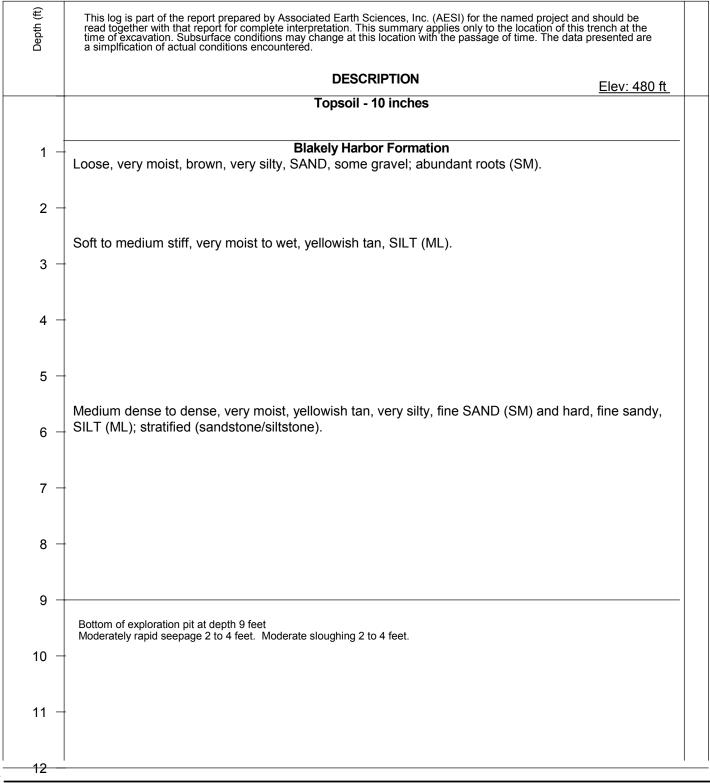
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Project No. 180070E001

12/13/19



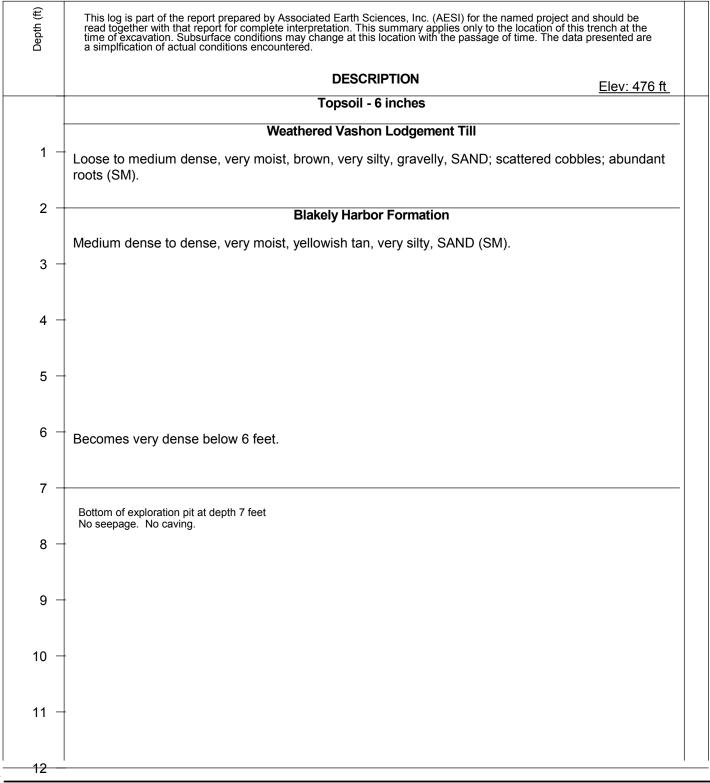
Issaquah HS #4 and ES #17 Issaquah, WA

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Project No. 180070E001

12/12/18

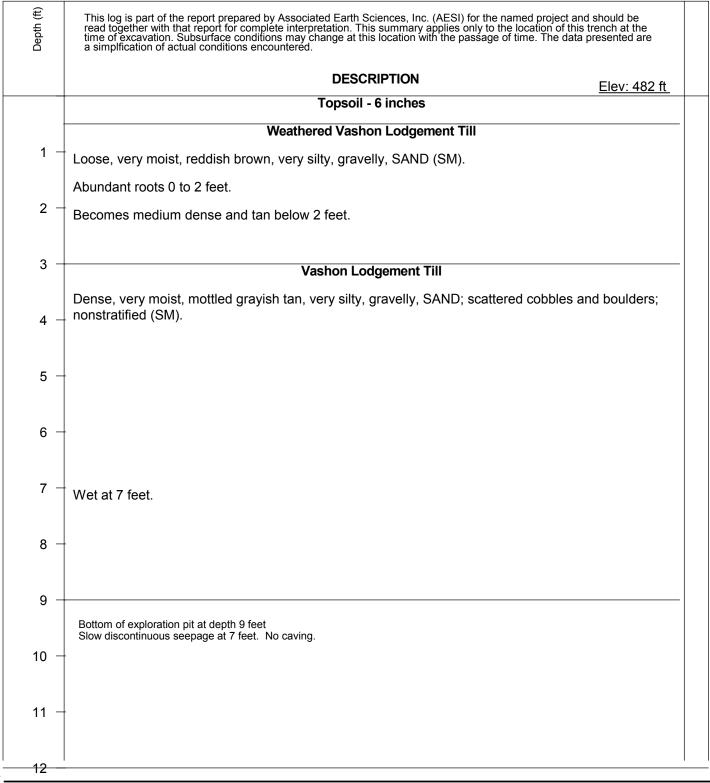


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Project No. 180070E001

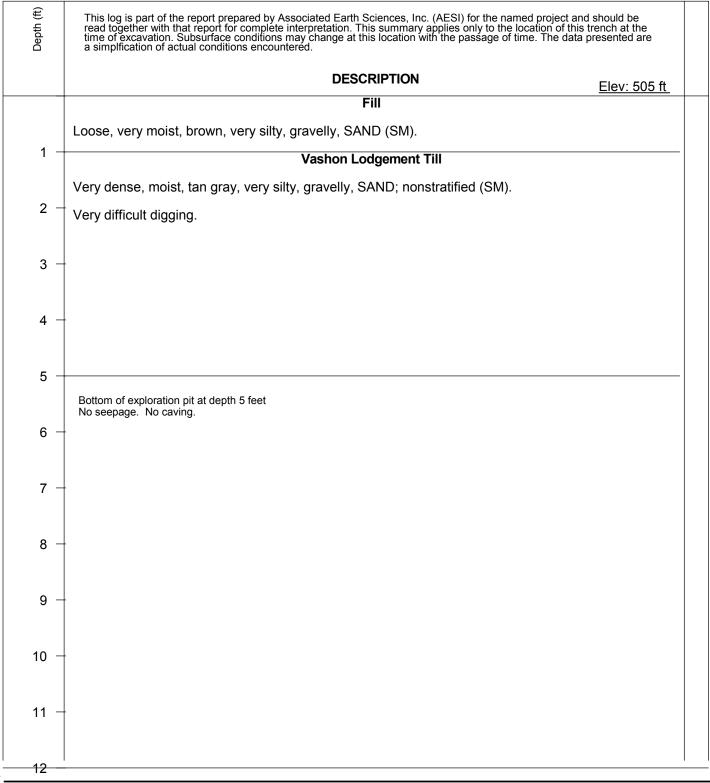


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Project No. 180070E001

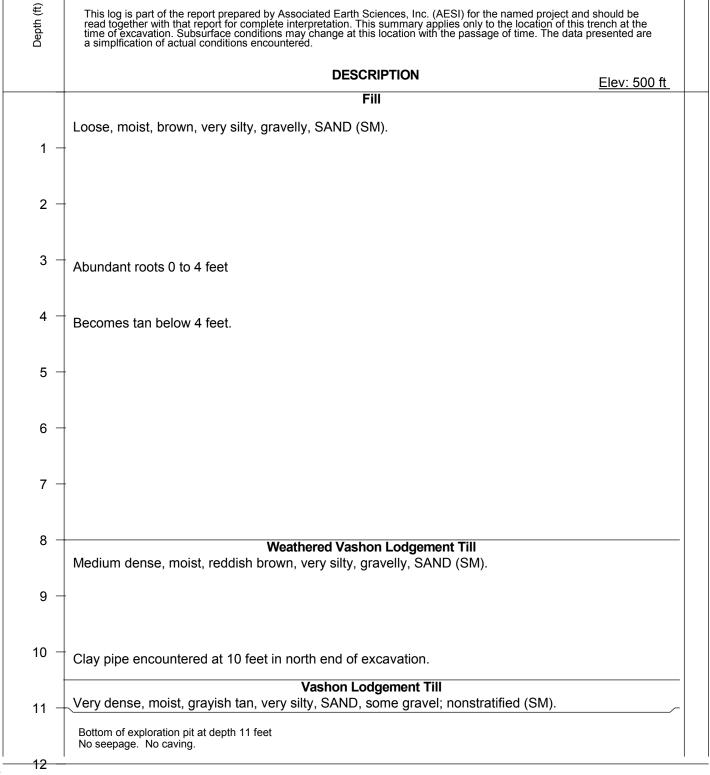


Issaquah HS #4 and ES #17 Issaquah, WA

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Project No. 180070E001

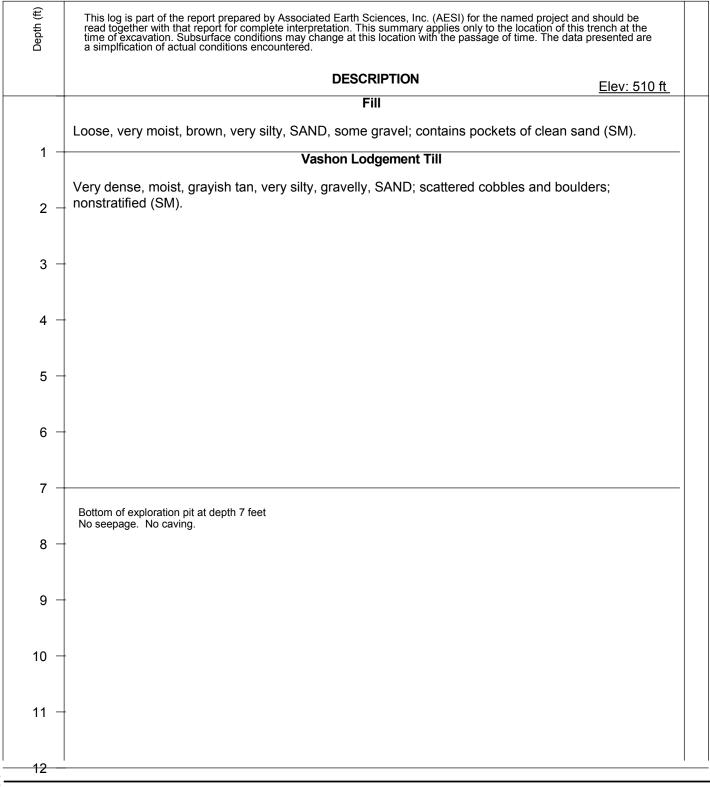


Issaquah HS #4 and ES #17 Issaquah, WA

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Approved by: CJK



Project No. 180070E001

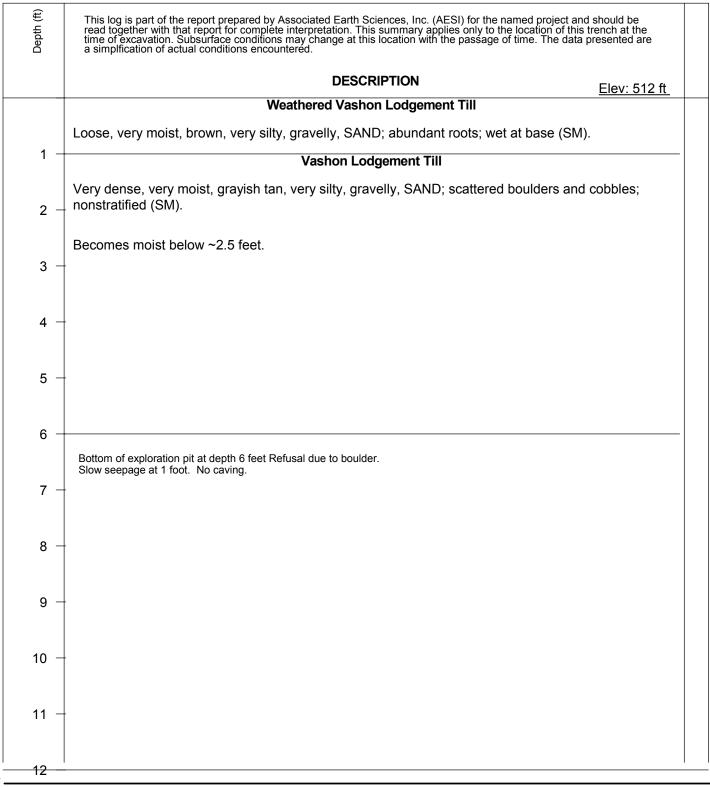


Issaquah HS #4 and ES #17 Issaquah, WA

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Approved by: CJK



Project No. 180070E001

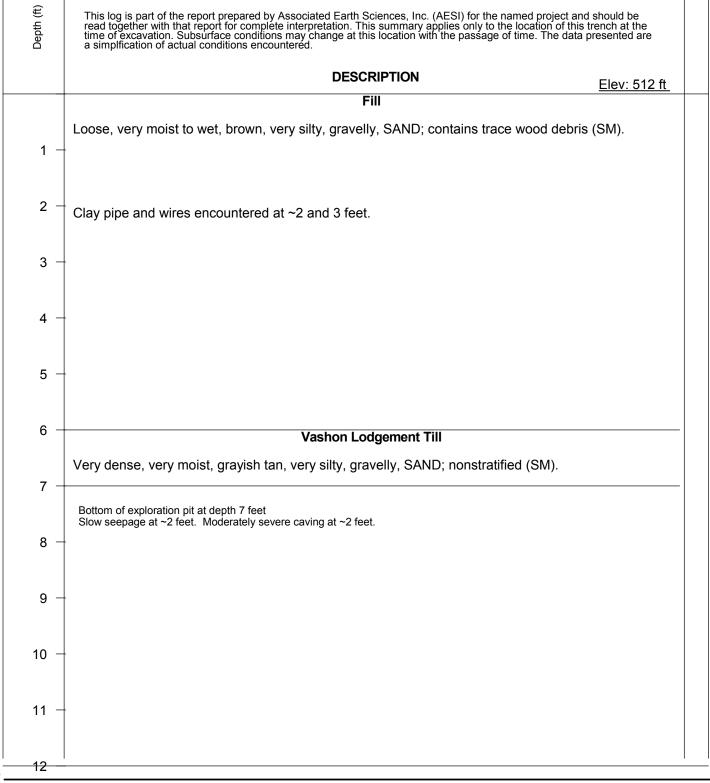


Issaquah HS #4 and ES #17 Issaquah, WA

Logged by: TJP
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Project No. 180070E001

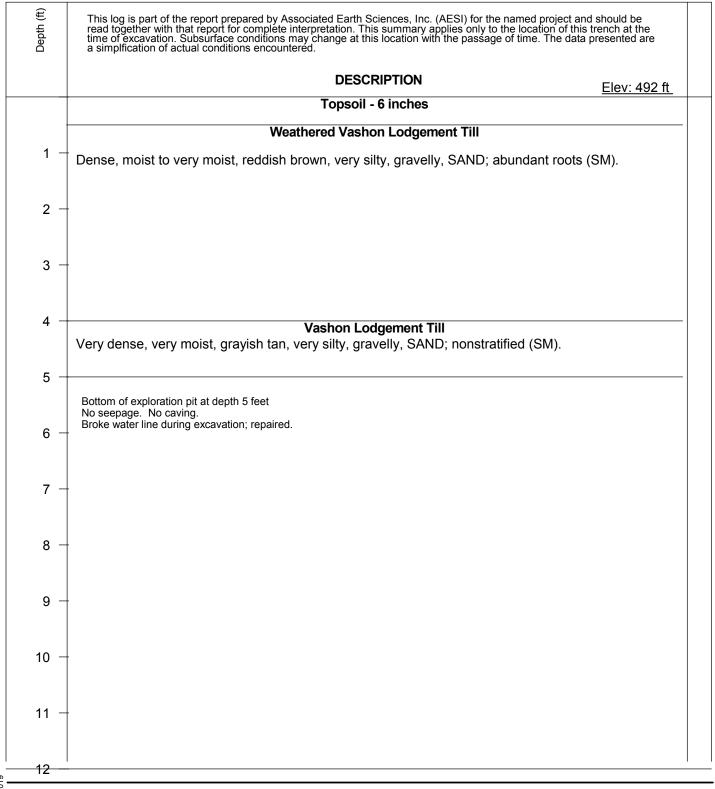


Issaquah HS #4 and ES #17 Issaquah, WA

Logged by: TJP
Approved by: CJK



Project No. 180070E001



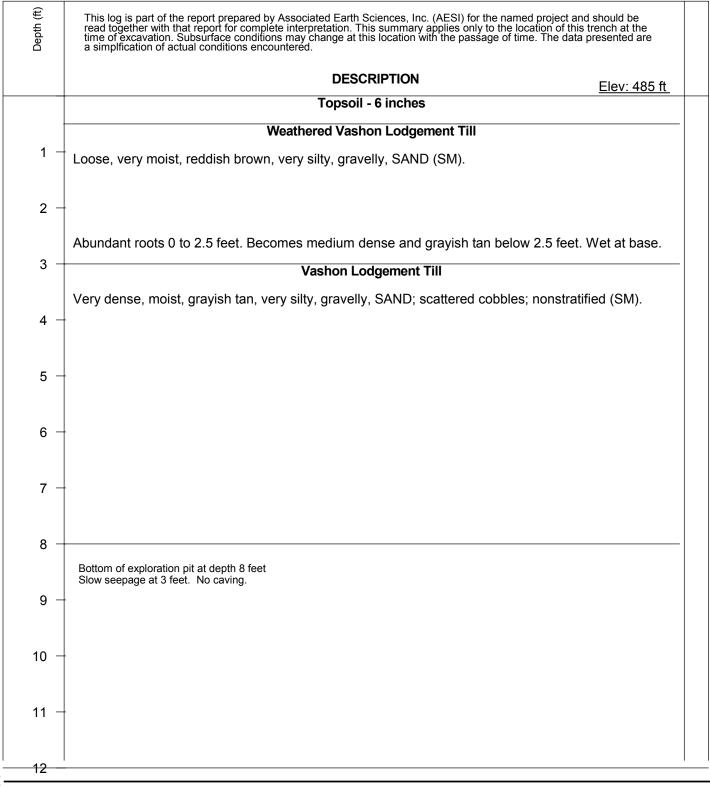
KCTP3 180070.GPJ August 23, 2019

Logged by: TJP
Approved by: CJK



Issaquah HS #4 and ES #17 Issaquah, WA

Project No. 180070E001

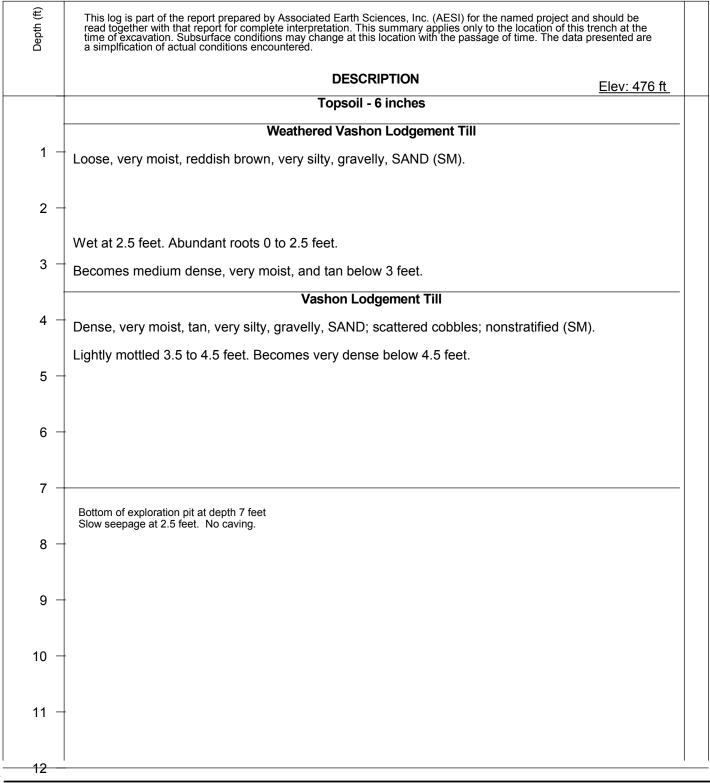


Issaquah HS #4 and ES #17 Issaquah, WA

Logged by: TJP
Approved by: CJK



Project No. 180070E001

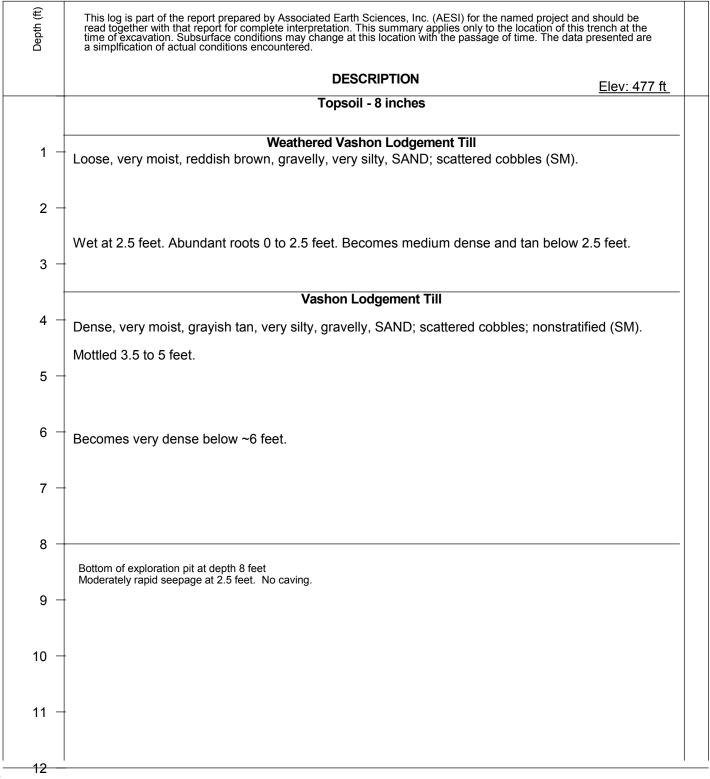


Issaquah HS #4 and ES #17 Issaquah, WA

Logged by: TJP
Approved by: CJK



Project No. 180070E001

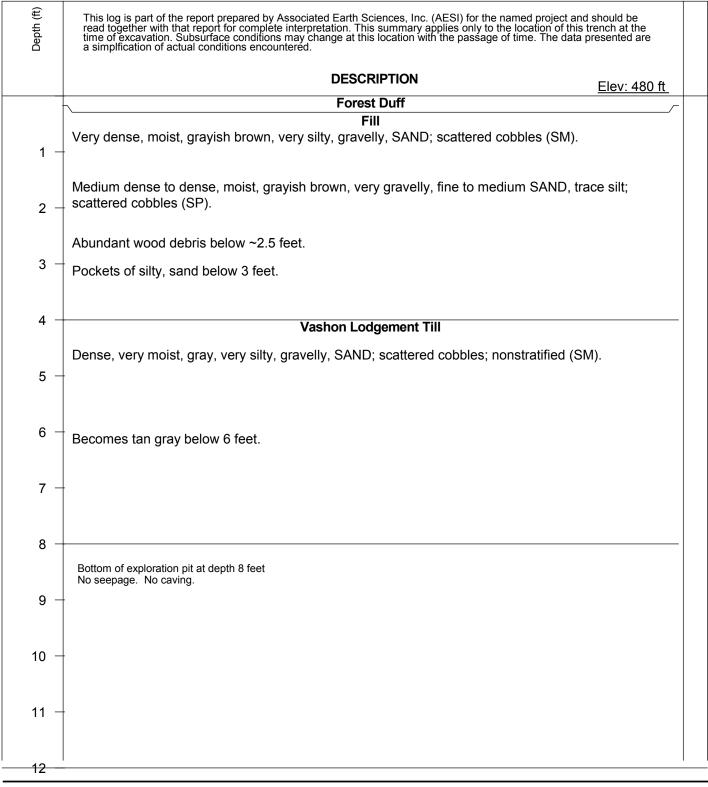


Issaquah HS #4 and ES #17 Issaquah, WA

Logged by: TJP
Approved by: CJK



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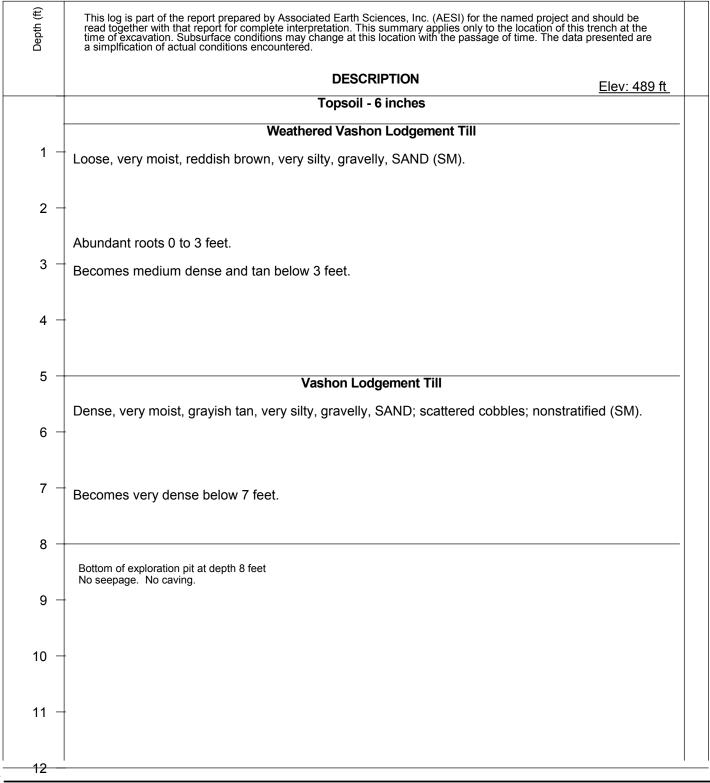


Issaquah HS #4 and ES #17 Issaquah, WA

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Approved by: CJK



Project No. 180070E001

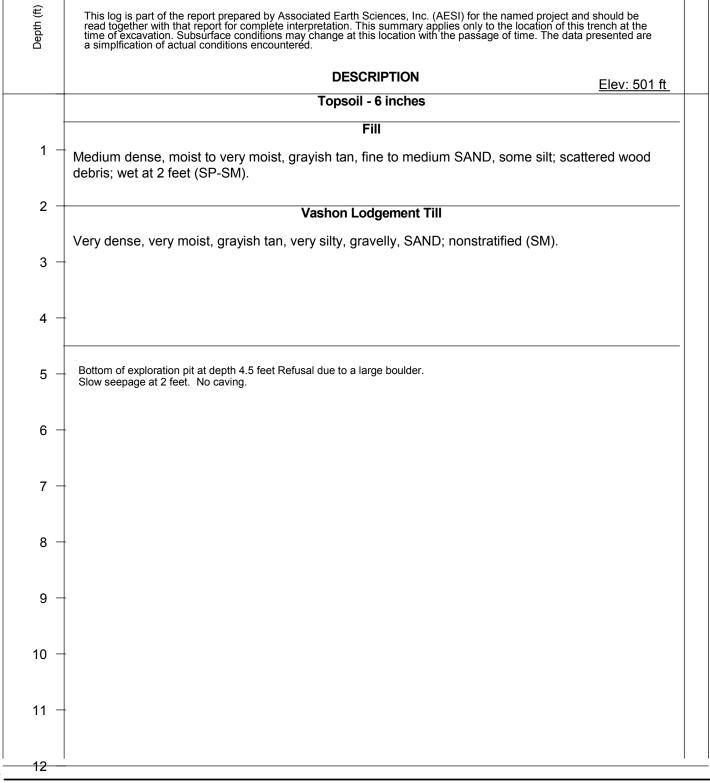


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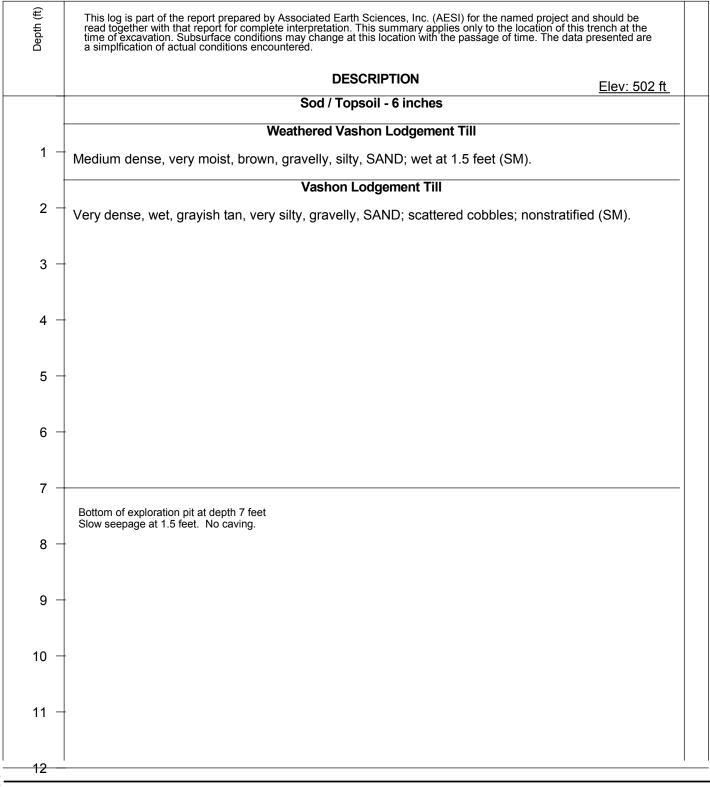


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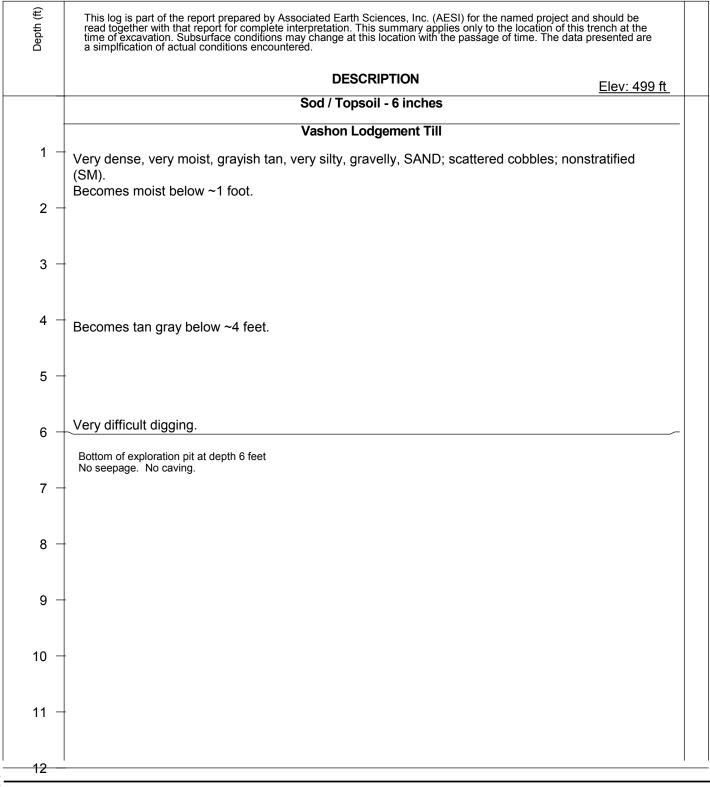


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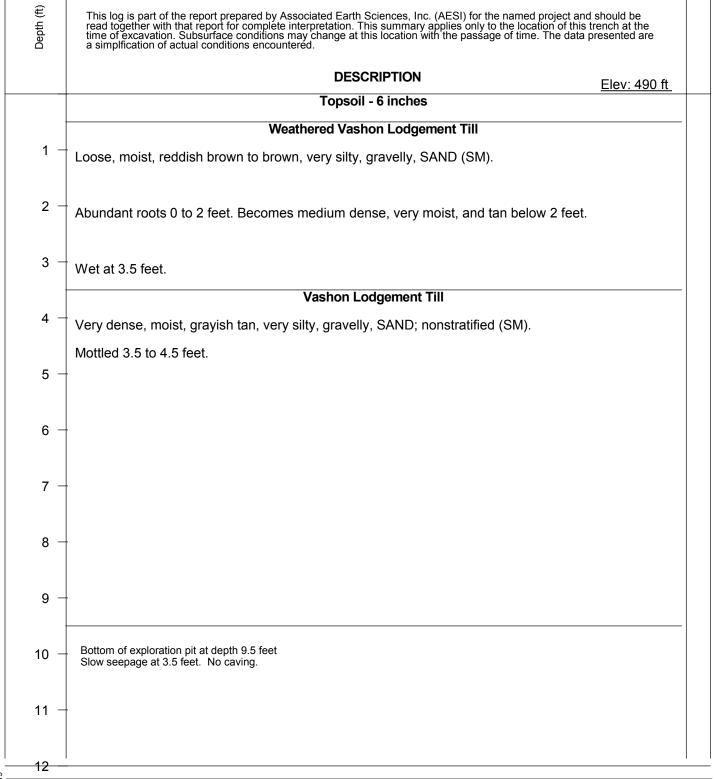


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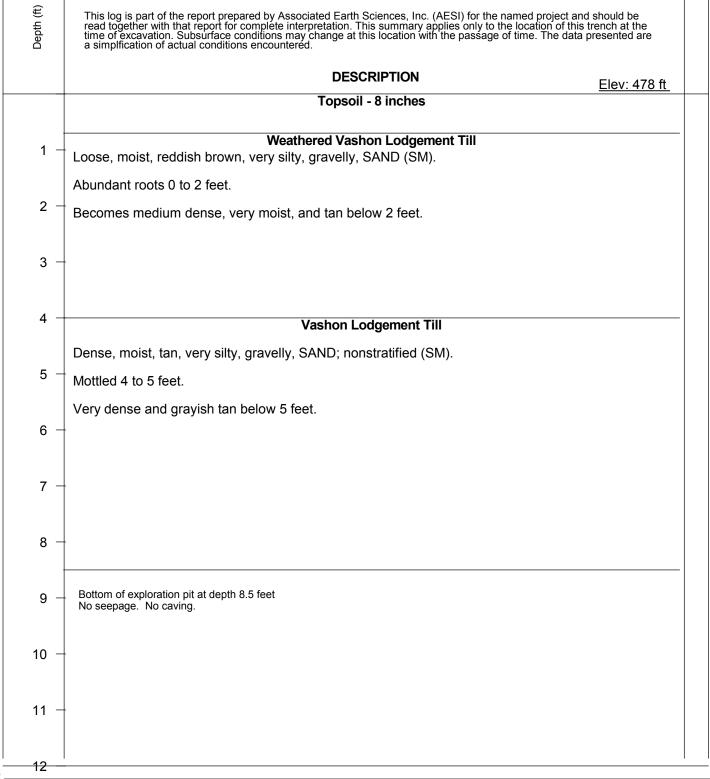


Issaquah HS #4 and ES #17 Issaquah, WA

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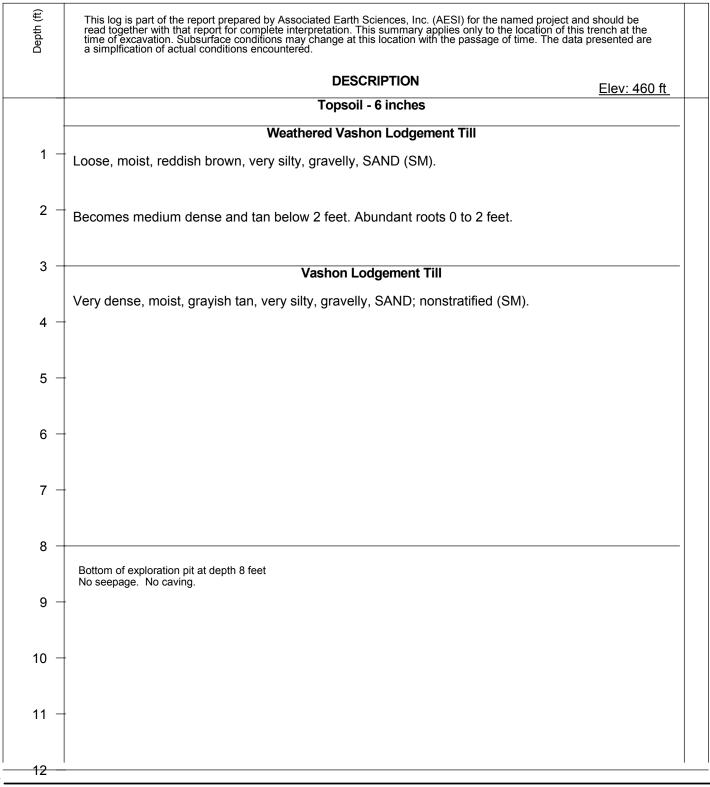


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Project No. 180070E001

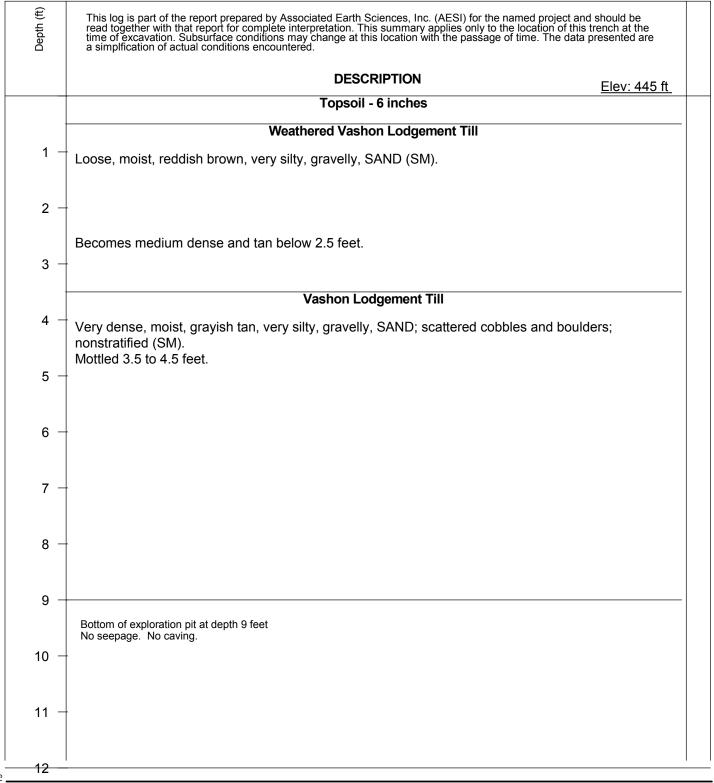


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Project No. 180070E001

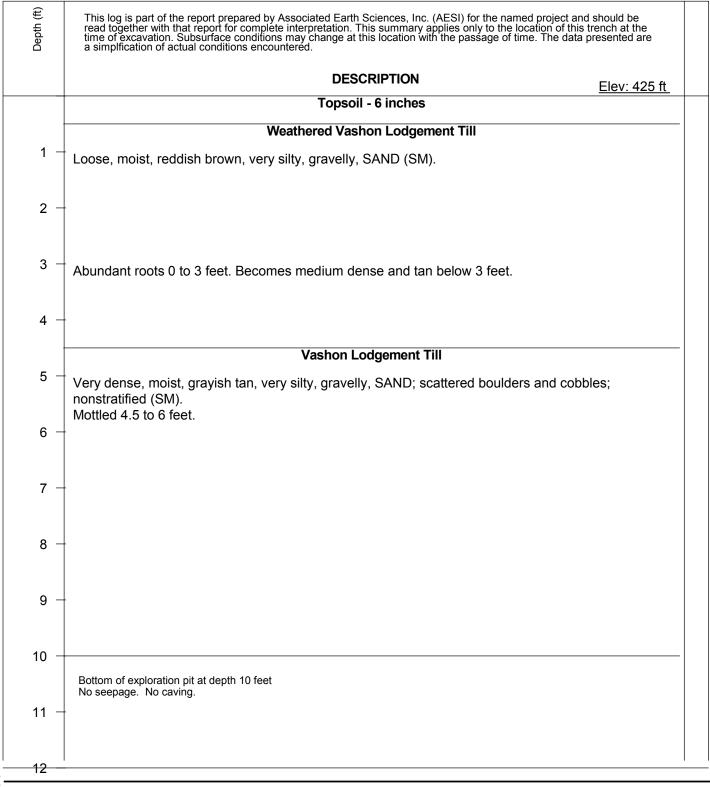


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Project No. 180070E001

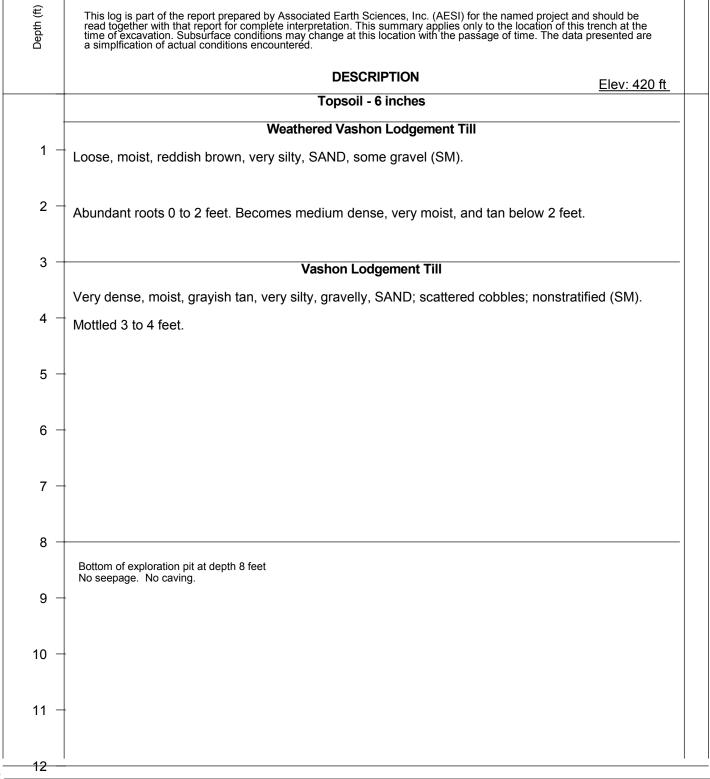


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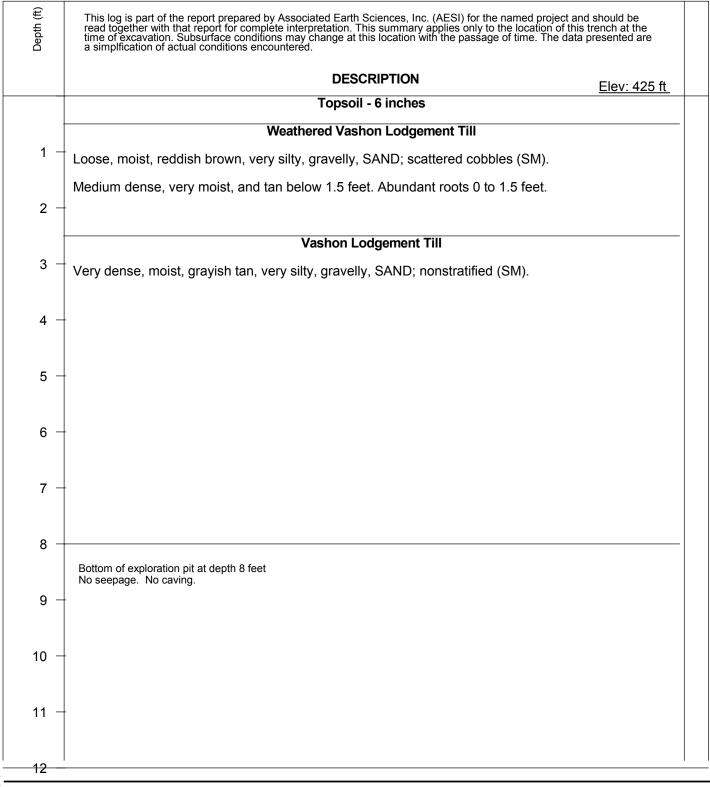


Issaquah HS #4 and ES #17 Issaquah, WA

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Approved by: CJK



Project No. 180070E001

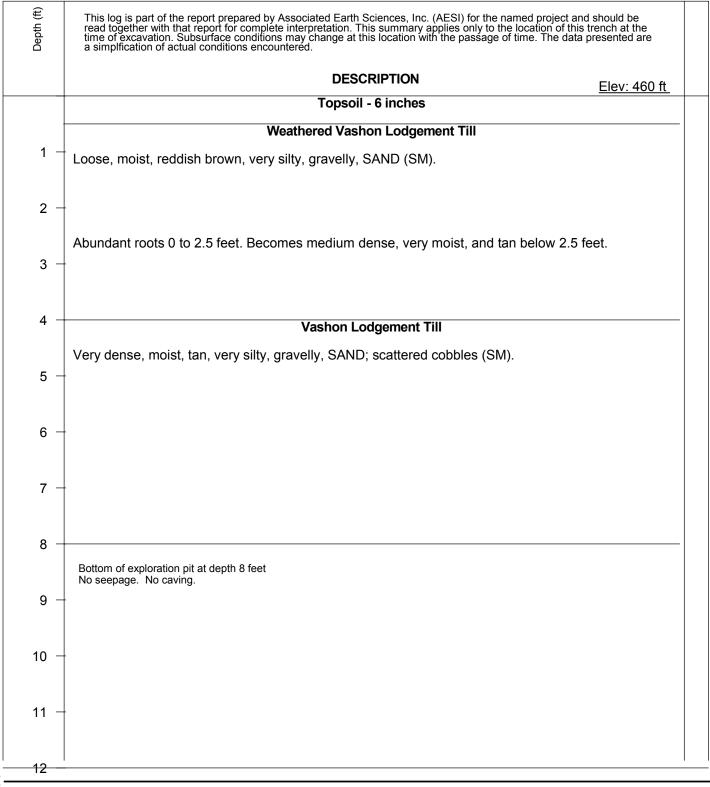


Issaquah HS #4 and ES #17 Issaquah, WA

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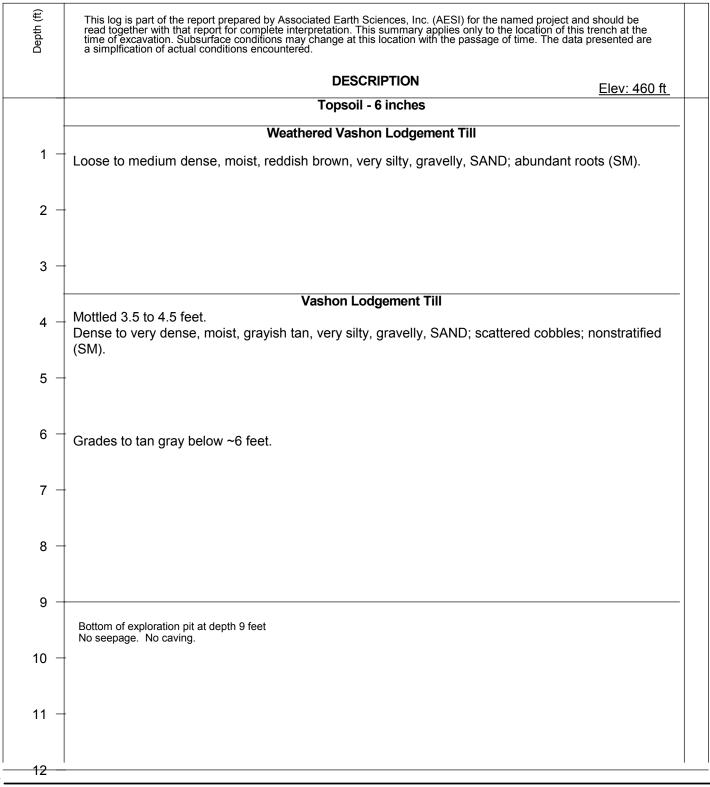


Issaquah HS #4 and ES #17 Issaquah, WA

Logged by: TJP
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Project No. 180070E001

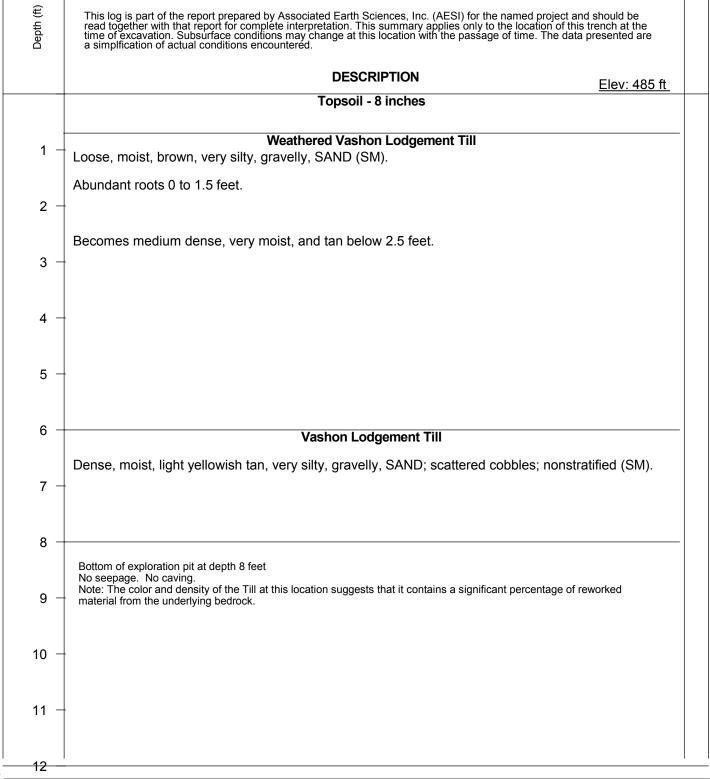


Issaquah HS #4 and ES #17 Issaquah, WA

Logged by: TJP
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Project No. 180070E001

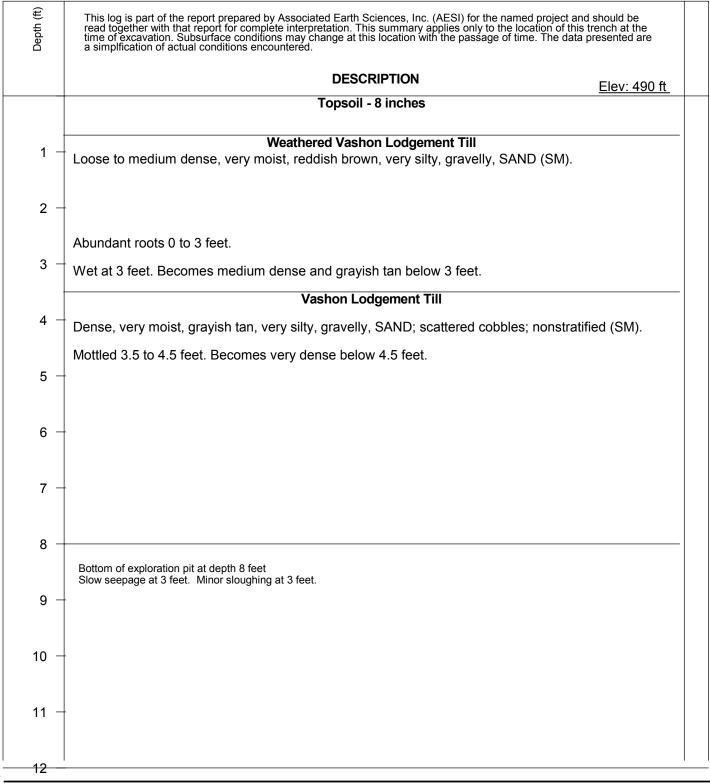


Issaquah HS #4 and ES #17 Issaquah, WA

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Project No. 180070E001



Issaquah HS #4 and ES #17 Issaquah, WA

Logged by: TJP
Approved by: CJK



Project No. 180070E001

1	Ear Solul NW		th Place Vashing : 425-4	N.E., Su ton 9800 49-4704	ulte 201 5	TEST PIT NUMBER TP- PAGE 1 OF		
						PROJECT NAME Plateau Campus Property		
PROJ	ECT NU	MBER 3333	CC	NO ETC	D EIEIA	PROJECT LOCATION Issaguah, Washington	-	
						GROUND ELEVATION TEST PIT SIZE GROUND WATER LEVELS:	-	
		METHOD			2000			
LOGG	ED BY	SHA	CH	ECKED E	Y SSR	AT END OF EXCAVATION		
NOTE	S Depti	of Topsoil & Sod 10	0": bare	soil	· · · · · · · · · · · · · · · · · · ·	AFTER EXCAVATION	-	
о DEРТН (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		
			TPSL	2 2 2 2 24 1.0	TOPSOIL	And the state of t	_	
			-	1.0	Brown silty SA	ND with gravel, loose to medium dense, moist (Weathered Till)	-	
		MC = 16.90% Fines = 24,00%				ght iron oxide staining, becomes dense		
5		MC = 12.50%	SM		-becomes very	dense and unweathered, perched seepage		
				7,0	Test pit termina	ated at 7,0 feet below existing grade, Groundwater seepage encountered at 4.	.0	
					feet during exc	Bottom of test plt at 7.0 feet.		
	- 1							
				1				
				4				
- 1	3		1 1					
				1				
- 1								
							-	
- 1	1							
							1	
1								
							1	
							1	

GENERAL BH / TP / WELL 3333,GPJ GINT US.GDT 8/6/14

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Ban	tarin .
W	Solutions
- 10	NWire
200	The state of the s

GENERAL BH / TP / WELL 3333, GPJ, GNT US GDT 8/5/14

Earth Solutions NW 1805 - 136th Piece N.E., Suite 201

TEST PIT NUMBER TP-3

MI PIA	eau Campus, LLC			PROJECT NAME Plateau Campus Property		
JECT NU	MBER 3333		PRO	JECT LOCATION _issaguah, Washington		
E START	ED 5/5/14 CONTRACTOR NV	COMPLET	D <u>5/5/14</u> GRO	UND ELEVATIONTEST P	IT \$IZE	
			SY SSR	AT END OF EXCAVATION		
ES Dept	h of Topsoll & Sod 12	?": lvy		AFTER EXCAVATION	and the state of t	
SAMPLE TYPE NUMBER	TESTS	U.S.C.S. GRAPHIC LOG		MATERIAL DESCRIPTION		
		TPSL 2 22	TOPSOIL			
	MC = 15.70% Fines = 29.10%	SM	Brown silty SAND with -heavy perched seepag	gravel, loose to medium dense, moist (Weati	hered Till)	
	MC = 8.00%			-becomes very dense and unweathered		
			Test pit terminated at 5.0 feet below existing grade. Groundwater seepage encountered at 1 feet during excavation. Bottom of test pit at 5.0 feet.			
		1 1				

DATE EXCA	ENT Plate JECT NUI E STARTE AVATION AVATION GED BY	Telephone: Fax: 425-44 Fax: 42	th Place Vashing 425-4/ 49-4711 CO / Excav	e N.E., Sgton 980 49-4704 1 DMPLETI vetting	005 4 TED <u>5/5/14</u>	TEST PIT NUMBER TP PAGE 1 OF PROJECT NAME Plateau Campus Property PROJECT LOCATION Issaquah, Washington GROUND ELEVATION TEST PIT SIZE GROUND WATER LEVELS: AT TIME OF EXCAVATION — AFTER EXCAVATION — AFTER EXCAVATION —		
O DEPTH	E .	TESTS	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		
			TPSI	22 2 2 24 24 2 24 2				
 5		MC = 11.80% MC = 12.00% MC = 12.10%	SM		Brown sitty SA	AND with gravel, loose and medium dense, moist (Weathered Till) y dense and unweathered		
					Test pit termina feet during exce	eated at 8.0 feet below existing grade. Groundwater seepage encountered at 3.5 cavation. Bottom of test pit at 8.0 feet.		

GENERAL BH / TP / WELL 3333,GPJ GINT US,GDT 815/14

7	Earth Solu 1805 - 130 11410 ns Wurz Elephone Fax: 425-	oth Place Washing 3: 425-4 449-471	N.E., ston 98 49-470 1	005 4	TEST PIT NUMBER TP- PAGE 1 OF		
CLIENT F	Plateau Campus, LLC				PROJECT NAME Plateau Campus Property		
PROJECT	NUMBER 3333		Maria es	rdn Eleisa	PROJECT LOCATION Issaquah, Washington		
EXCAVATI	ON CONTRACTOR AN	N Even	unine	1ED 3/3/14	GROUND ELEVATION TEST PIT SIZE GROUND WATER LEVELS:		
LOGGED E	Y SHA	CH	ECKE	BY SSR	AT TIME OF EXCAVATION		
NOTES D	epth of Topsoli & Sod 6	": bare r	soll	3411	AFTER EXCAVATION		
			T				
O DEPTH (ft) SAMPLE TYPE	TESTS	U.S.C.S.	GRAPHIC		MATERIAL DESCRIPTION		
		TPSL	20 3	0.5 TOPSOIL			
5	MC = 14.30% MC = 16.80%			-becomes medi	ND with gravel, medium dense, moiet (Fill) ium dense to dense hered till contact ted at 10.0 feet below existing grade. No groundwater encountered during		
				excavation.	Bottom of test pit at 10.0 feet.		

GENERAL BHITP I WELL 3333.GPJ GINT US GDT 855/4

1	Solu NW	tre	Be Te Fa	305 - 1 ellevus elepho ex: 42	olutions NW 36th Place N.E., Suite 201 a, Washington 98005 ne: 425-449-4704 5-449-4711	TEST PIT NUMBER TP- PAGE 1 OF				
					1.73.00					
PROJ	ECT NU	MBER	333	3		PROJECT LOCATION Issaguah, Washington				
DATE	BTART	ED _5	/5/14		COMPLETED 5/5/14	GROUND ELEVATION TEST PIT SIZE				
EXCA	VATION	CON.	TRACT	ror _	NW Excavating	GROUND WATER LEVELS:				
					· · · · · · · · · · · · · · · · · · ·					
					CHECKED BY SSR	AT END OF EXCAVATION				
NOTE	S Dept	h of T	opsoil	& Soc	i 6": ferns	AFTER EXCAVATION				
o DEPTH	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC			MATERIAL DESCRIPTION				
-		TPSL	<u> </u>	0.5	TOPSOIL		_			
		SM		4.0	-becomes very dense and unwesting. Test pit terminated at 4.0 feet below	w existing grade. No groundwater encountered during excevation. Bottom of test pit at 4.0 feet.				

GENERAL SHITP / WELL 3353,6PJ GINT US,6DT 01574

CLIENT Plat PROJECT NU DATE START EXCAVATION EXCAVATION LOGGED BY	MBER 3333 ED 5/5/14 CONTRACTOR NV METHOD	th Place Vashing 425-4 149-471 CO V Excav	N.E., pton 98 49-470 1	PROJECT NAME Pleteau Campus Property PROJECT LOCATION Issaguah, Washington O 5/5/14 GROUND ELEVATION TEST PIT SIZE GROUND WATER LEVELS: AT TIME OF EXCAVATION AT END OF EXCAVATION AFTER EXCAVATION AFTER EXCAVATION AT EXCAVATION AFTER EXCAVATION
SAMPLE TYPE	TESTS	U.S.C.S.	GRAPHIC	MATERIAL DESCRIPTION
5	MC = 15.80% MC = 10.40% Fines = 11.30% MC = 21.60%	SM GP-GM		Topsoil Brown slity SAND with gravel, medium dense, moist (Weathered Tili) -cobbles -becomes very dense and unweathered -cobbles down to terminus of test pit Brown poorly graded GRAVEL with slit and sand, dense, moist Test pit terminated at 13.0 feet below existing grade. No groundwater encountered during excavation. Bottom of test pit at 13.0 feet.

GENERAL BH / TP / WELL 3333 GPJ GINT US, GDT 6/3/14

	Ear Solut NW	RODS Bellevue, V	th Place Vashing : 425-44	N.E., S ton 980 19-4704	05	TEST PIT NUMBER TP- PAGE 1 OF		
						PROJECT NAME Plateau Campus Property		
PROJ	JECT NU	MBER 3333				PROJECT LOCATION Issaguah, Washington		
EXCA EXCA LOGG	VATION VATION SED BY	METHOD	V Excav	ating	ED <u>5/5/14</u> BY <u>SSR</u>			
o DEPTH	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		
	<u>y</u>	MC = 23.20%	TPSL ,		Brown silty SAND with gravel, loose to medium dense, moist (Weathered Till) -fractured -cobbles, mottled texture			
5		MC = 17.20%	GP- GM		O.	raded GRAVEL with slit and sand, dense, moist		
				9408.	Test pit terminal excavation.	ted at 9.0 feet below existing grade. No groundwater encountered during Bottom of test pit at 9.0 feet,		

GENERAL BH / TP / WELL 3333.GPJ GINT US.GDT 8/5/14

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	Solutions
-	

GENERAL BH / TP / WELL 3333.GPJ GINT US.GDT 8/6/14

Earth Solutions NW 1805 - 136th Place N.E., Suite 201

TEST PIT NUMBER TP-8

JECT NUI	WBER 3333			PROJECT LOCATION Issagush, Washington		
E STARTE	D 5/5/14	COMPL	ETED <u>5/5/14</u>	GROUND ELEVATION TEST PIT SIZE		
				GROUND WATER LEVELS:		
			ED BY SSR			
E6 Deot	of Topsoll & Sod 1	D": forest dufi	I SOL	AT END OF EXCAVATION		
SAMPLE TYPE NUMBER	TESTS	U.S.C.S. GRAPHIC		MATERIAL DESCRIPTION		
As		TPSL ₂ 32	TOPSOIL	AND with gravel, loose to medium dense, moist (Weathered Till)		
		SM	-becomes ver -cobbles	ry dense and unweathered		
	MC = 19.70%		Test pit termin excavation.	nated at 8.0 feet below existing grade. No groundwater encountered during Bottom of test pit at 8.0 feet.		

Solu.	rth itions Vac	18 Be	Earth Solutions NW 1805 - 136th Piace N.E., Sulte 201 Bellevue, Washington 98005 Selephone: 425-449-4704 Ex: 425-449-4711	TEST PIT NUMBER TP-10 PAGE 1 OF		
				PROJECT NAME Plateau Campus Property		
PROJECT N	JMBER	333	33	PROJECT LOCATION Issagush, Washington		
				GROUND ELEVATION TEST PIT SIZE		
			CTOR NW Excavating			
			OUTOVER BY OOD			
				AT END OF EXCAVATION		
	nn or 1	opson T	Il & Sod 10": blackberry bushes	AFTER EXCAVATION		
O DEPTH (ft) SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC		MATERIAL DESCRIPTION		
	TPSI	11/2	TOPSOIL			
	IFOL	2 44	1.0			
		Ш	Brown silty SAND with gravel, me	alum dense, moist		
	SM	Ш				
		Ш	3.0 -cobbles and weathered fractured	bedrock		
1		3	Brown poorly graded GRAVEL wit	th silt and sand, dense, moist		
	GP- GM	2	Ω			
5	- CIWI	- 74	5.0			
			rest pit terminated at 5.0 feet beit	ow existing grade. No groundwater encountered during excavation. Bottom of test pit at 5.0 feet.		

GENERAL BH / TP / WELL 3333, GPJ GINT US GDT 8/5/14

FIGURE A-2

		200 01 12011111				FIGURE A-2
PROJ	IECT NA	ME: Madison Pointe PROJ.	NO: <u>T-7252</u>	LC	GGED	BY: CSD
LOCA	ATION:	Issaquah, Washington SURFACE CONDS: Hea	avy Understory	AF	PROX	ELEV: <u>466 Feet</u>
DATE	LOGGE	ED: July 8, 2015 DEPTH TO GROUNDWATER:	N/A DEP	гн то (CAVING	6: _N/A
ОЕРТН (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1 —		Brown silty SAND, fine grained, dry, heavy organic inclusions. (SM) (Topsoil)	Loose	7.1		
2-	_1_	Drawn silky CAND with ground fine to modium grained		7.1		
3 <i>→</i> 4 <i>→</i>		Brown silty SAND with gravel, fine to medium grained, dry, roots. (SM)	Medium Dense			
5-						
6-	2			9.5		
7-		Gray silty SAND with gravel to SAND with silt and gravel, fine to medium grained, dry to moist, cemented. (SM/SP-SM)	Very Dense			
8-						
9-						
10-		Total distribution of the state				
11		Test pit terminated at approximately 10 feet. No groundwater seepage observed.				
12-						
13⊸						
14-						
15-						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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FIGURE A-3

PROJECT NAME: Madison Pointe PROJ. NO: T-7252 LOGGED BY: CSD								
		ME: Madison Pointe PROJ. Issaquah, Washington SURFACE CONDS: Hea						
DATE LOGGED: July 8, 2015 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A								
ОЕРТН (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS		
		Brown silty SAND, fine grained, dry, heavy organic inclusions. (SM) (Topsoil)	Loose					
2-	1	Brown silty SAND with gravel, fine to medium grained, dry, roots. (SM)	Medium Dense	9.2				
3- 4-	2	Gray silty SAND with gravel, fine to medium grained, dry, cemented. (SM)	Dense	6.5				
5- 6- 7- 8- 9-	3	Gray silty SAND with gravel to SAND with silt and gravel, fine to medium grained, moist, cemented. (SM/SP-SM)	Very Dense	8.1				
11-		Test pit terminated at approximately 10 feet. No groundwater seepage observed.						
13 <i>-</i>								
15⊸								

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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FIGURE A-4

PROJECT NAME: Madison Pointe PROJ. NO: T-7252 LOGGED BY: CSD

LOCATION: Issaquah, Washington SURFACE CONDS: Moderate Understory APPROX. ELEV: 438 Feet

DATE LOGGED: July 8, 2015 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: 0 to 3 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
		(6 inches ORGANICS)				
1-				5,7		
	1	Brown silty SAND with gravel to SAND with silt and gravel, fine to medium grained, dry, roots. (SM/SP-SM)	Medium Dense			
2-						
3-						
4-		Gray silty SAND with gravel to SAND with silt and gravel, fine to medium grained, dry to moist, cemented, occasional cobble. (SM/SP-SM)				
_				4.9		
5	2			4.9		
6-			Very Dense			
7-		occasional counte. (Givi/Oi -Givi)				
8-						
9-						
10-		Test pit terminated at approximately 9 feet. No groundwater seepage observed. Minor caving observed in the upper 3 feet.				
11-						
12-						
13-						
14-						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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FIGURE A-5

PROJ. NO: <u>T-7252</u> PROJECT NAME: Madison Pointe LOGGED BY: CSD LOCATION: Issaquah, Washington SURFACE CONDS: Minimal Understory APPROX. ELEV: 480 Feet DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A DATE LOGGED: July 8, 2015 (TSF) DEPTH (FT.) SAMPLE NO. POCKET PEN. CONSISTENCY/ (%) M **DESCRIPTION REMARKS RELATIVE DENSITY** Brown silty SAND, fine grained, dry, heavy organic inclusions. (SM) (Topsoil) Loose 1-9.7 Gray silty SAND with gravel, fine to medium grained, dry, Dense some roots. (SM) 3 23.7 2

Test pit terminated at approximately 10 feet. No groundwater seepage observed.

Gray SILTSTONE, moist.

8

10-

11-

12-

13-

15-

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



Very Dense

25.1

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FIGURE A-6

PROJECT NAME: Madison Pointe PROJ. NO: T-7252 LOGGED BY: CSD

LOCATION: Issaquah, Washington SURFACE CONDS: Moderate Understory APPROX. ELEV: 490 Feet

DATE LOGGED: July 8, 2015 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A

DEPTH (FT.) SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	(%) M	POCKET PEN. (TSF)	REMARKS
1-	Brown silty SAND, fine grained, dry, heavy organic inclusions. (SM) (Topsoil)	Loose			
3-	Brown silty SAND with gravel, fine to medium grained, dry, large roots. (SM)	Medium Dense	9.0		
5- 6- 2	Gray-brown silty SAND mixed with pieces of weathered SANDSTONE, fine to medium grained, dry, cobbles. (SM)	Very Dense	11.6		
8- 9-	*Sandstone pieces increase with depth, by 9 feet became difficult to excavate with 125 machine				
10-	Test pit terminated at approximately 9 feet. No groundwater seepage observed.				
11-					
12-	0				
13-					
14-					

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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FIGURE A-7

PROJ. NO: T-7252 LOGGED BY: CSD PROJECT NAME: Madison Pointe LOCATION: Issaquah, Washington SURFACE CONDS: Brush/Weeds APPROX. ELEV: 520 Feet

DATE LOGGED: July 8, 2015 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	(%) M	POCKET PEN. (TSF)	REMARKS
1-	1	(less than 1" ORGANICS) FILL: gray sandy silt, fine grained, dry, roots, minor construction debris, large piece of concrete.	Medium Dense	11.0		
2-		Black silty SAND, fine to medium grained, dry, roots, heavy organic inclusions. (SM) (Topsoil)	Medium Dense			
3-						
4	2		Dense	56.0		
5-						
6-		Red-brown SILTSTONE, very weathered, some cobbles, occasional boulders.				
7-						
8-						
9-		@-9' material becomes less weathered, larger pieces	Very Dense	46.6		
10-	3			40.0		
11-		Test pit terminated at approximately 10 feet. No groundwater seepage observed.				
12-						
13-						
14-						
15-						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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FIGURE A-8

PROJECT NAME: Madison Pointe PROJ. NO: T-7252 LOGGED BY: CSD

LOCATION: Issaquah, Washington SURFACE CONDS: Heavy Understory APPROX. ELEV: 516 Feet

DATE LOGGED: July 8, 2015 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A

ATE L	LOGGE	ED: July 8, 2015 DEPTH TO GROUNDWATER:	N/A DEP	тн то	CAVINO	6: N/A
DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1-		Brown silty SAND, fine grained, dry, heavy organic inclusions. (SM) (Topsoil)	Loose			
2-	1	Brown silty SAND with gravel, fine to medium grained, dry, roots. (SM)	Medium Dense	8.0		
3-						
4-						
5-		Gray silty SAND with gravel to SAND with silt and gravel, fine to medium grained, dry, cemented. (SM/SP-SM)	Dense	5.9		
6-	2					
7-						
8-		Test pit terminated at approximately 7 feet. No groundwater seepage observed.				
9-						
10-						
11-						
2-						
3-						
4-						
15-						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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FIGURE A-9 PROJECT NAME: Madison Pointe PROJ. NO: T-7252 LOGGED BY: CSD SURFACE CONDS: Moderate Understory APPROX. ELEV: 482 Feet LOCATION: Issaguah, Washington DATE LOGGED: July 8, 2015 DEPTH TO GROUNDWATER: N/A DEPTH TO CAVING: N/A (TSF) SAMPLE NO. DEPTH (FT.) POCKET PEN. CONSISTENCY/ (%) M DESCRIPTION REMARKS **RELATIVE DENSITY** Brown silty SAND, fine grained, dry, heavy organic inclusions. (SM) (Topsoil) Loose 1 -5.3 1 Brown SAND with silt and gravel, fine to medium grained, 3-Medium Dense dry, roots. (SP-SM) 4 5 Dense 6-Gray silty SAND with gravel, fine to medium grained, dry to moist, cemented, some cobbles/boulders. (SM/SP-Very Dense 12.7 8-9 Red-brown SANDSTONE, moist, weathered, difficult to excavate. Very Dense 10.7 10-Test pit terminated at approximately 10 feet. No groundwater seepage observed. 11-

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

12-

13-

14-

15-



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FIGURE A-10

PROJECT NAME: Madison Pointe	PROJ. NO: <u>T-7252</u>	LOGGED BY: CSD
LOCATION: Issaquah, Washington	SURFACE CONDS: Moderate Understo	ory APPROX. ELEV: 482 Feet
DATE LOGGED: July 9, 2015	DEPTH TO GROUNDWATER: N/A	DEPTH TO CAVING: N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1-		Brown silty SAND, fine grained, dry, heavy organic inclusions. (SM) (Topsoil)	Loose			
2-	_1_	Brown silty SAND with gravel, fine to medium grained, dry, roots. (SM)	Medium Dense	7.2		
3- 4-						I
5-		Gray silty SAND with gravel to SAND with silt and gravel, fine to medium grained, dry to moist, some cementation, occasional cobble/boulder. (SM/SP-SM)				
6- 7-	2		Very Dense	8.0		
8-		*Soil becomes less cemented with depth.	very belise			
9	3	*At 9 feet soil becomes wet.		11.6		
10-						
11-		Test pit terminated at approximately 11 feet. No groundwater seepage observed.				
13-						
14-						
15-						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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FIGURE A-11

		200 01 1201111				FIGURE A-11
PROJ	ECT NA	ME: Madison Pointe PRO	OJ. NO: <u>T-7252</u>	_ LC	OGGED	BY: CSD
LOCA	TION:	Issaquah, Washington SURFACE CONDS: 1	AF	PPROX	. ELEV: 503 Feet	
DATE	LOGGE	ED: July 8, 2015 DEPTH TO GROUNDWATE	R: N/A DEP	тн то		G: _N/A
ОЕРТН (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	(%) M	POCKET PEN. (TSF)	REMARKS
1-		Brown silty SAND, fine grained, dry, heavy organic inclusions. (SM) (Topsoil)	Loose			
2-	1	Brown silty SAND with gravel, fine to medium grained, dry, roots. (SM)	Medium Dense	5.9		
4-			Dense			
5	2		Very Dense	9.6		
6-						
7		Gray silty SAND with gravel, fine to medium grained, dry to moist, cemented, occasional cobble. (SM)				
8-						
9-						
10-						
11-		Test pit terminated at approximately 11 feet. No groundwater seepage observed.				
13-						
14 —						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

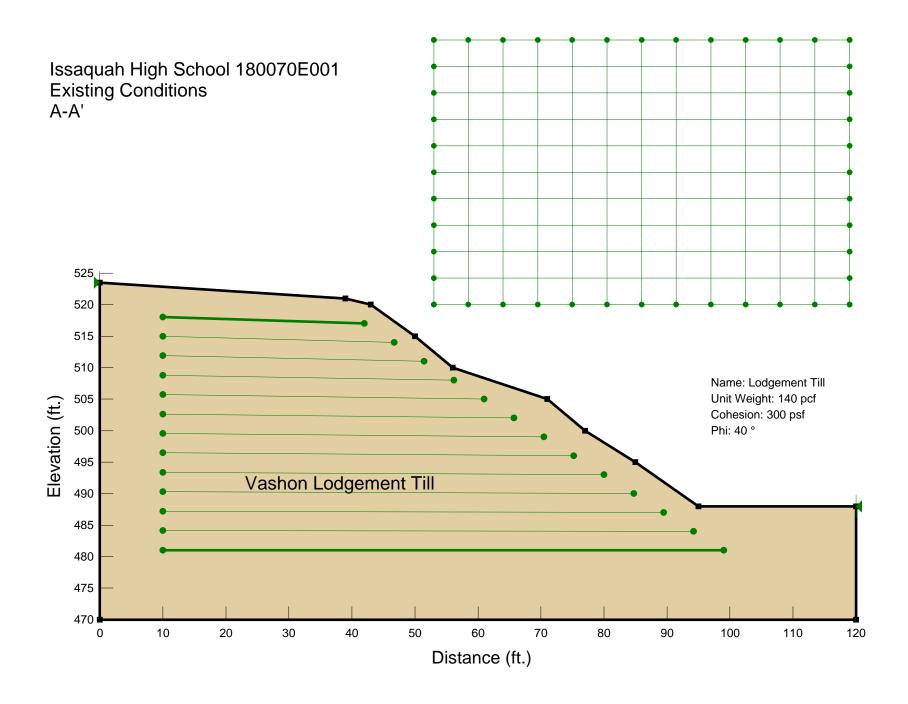
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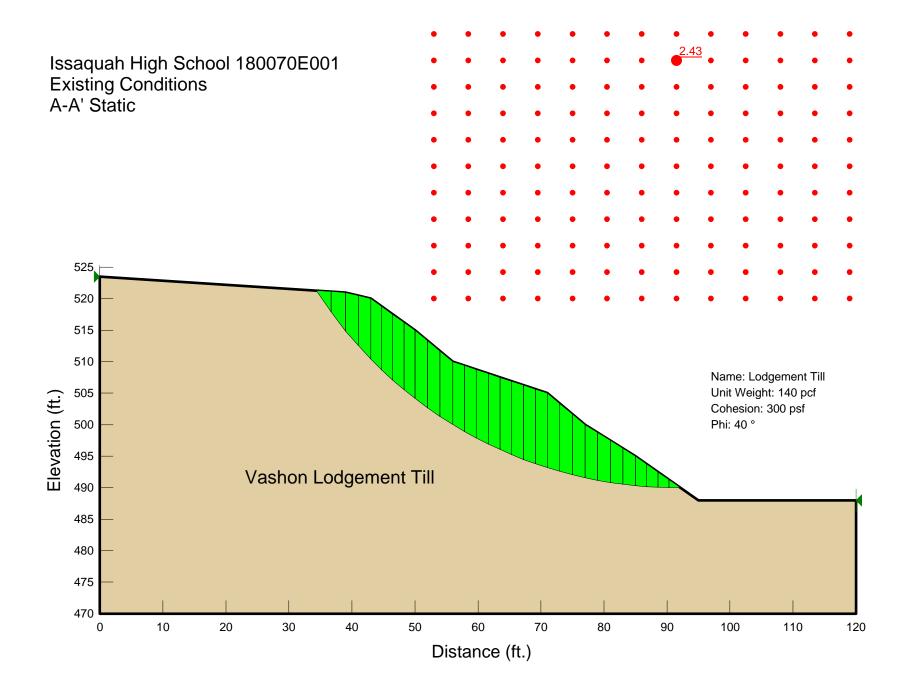


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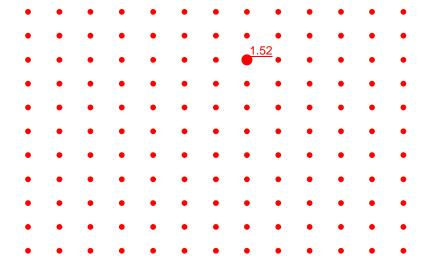
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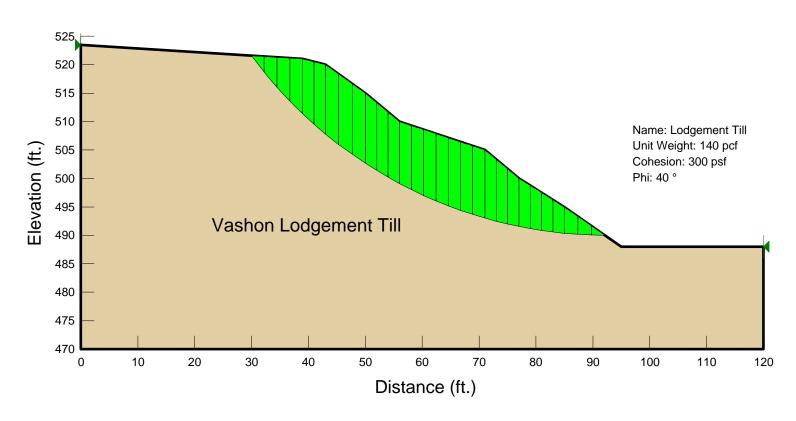
APPENDIX B SLOPE/W Profiles



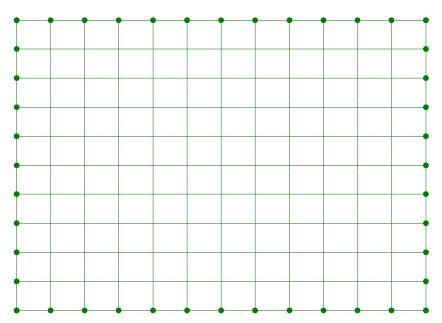


Issaquah High School 180070E001 Existing Conditions A-A' Seismic - 0.26g





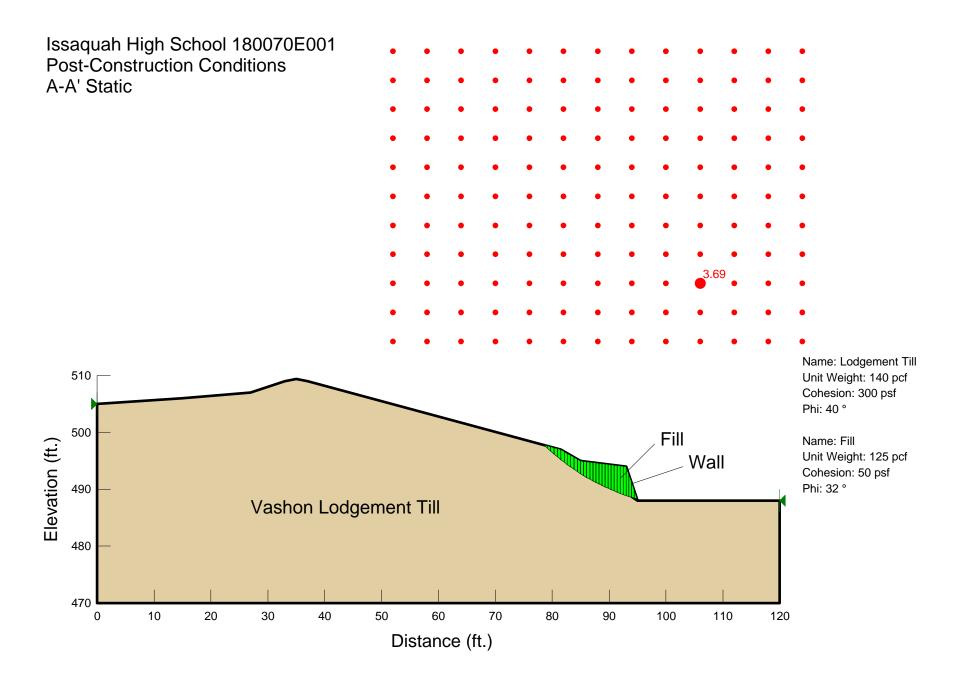
Issaquah High School 180070E001 Post-Construction Conditions A-A'



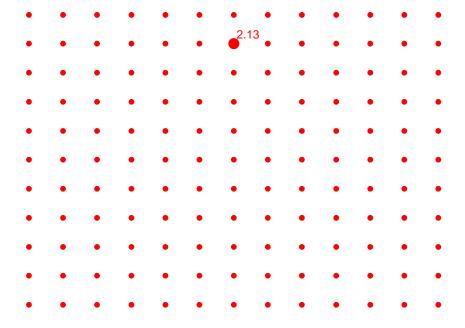


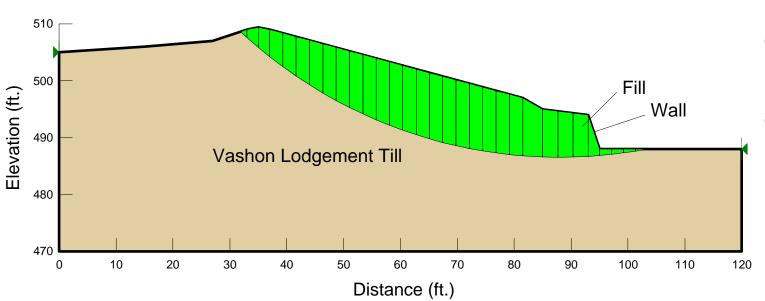
Name: Lodgement Till Unit Weight: 140 pcf Cohesion: 300 psf Phi: 40 °

Name: Fill Unit Weight: 125 pcf Cohesion: 50 psf Phi: 32 °



Issaquah High School 180070E001 Post-Construction Conditions A-A' Seismic - 0.26g



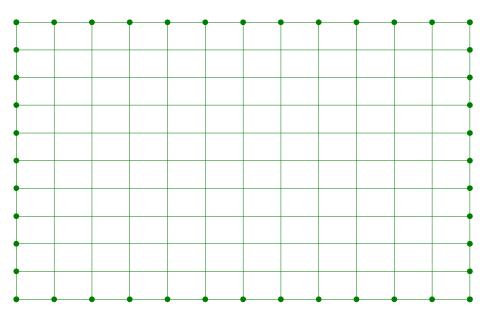


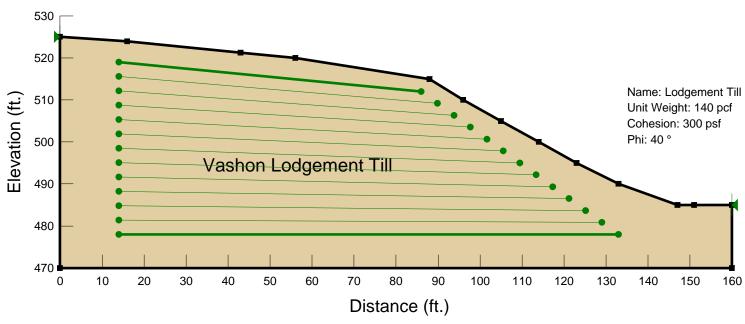
Name: Lodgement Till Unit Weight: 140 pcf Cohesion: 300 psf Phi: 40 °

Name: Fill Unit Weight: 125 pcf Cohesion: 50 psf

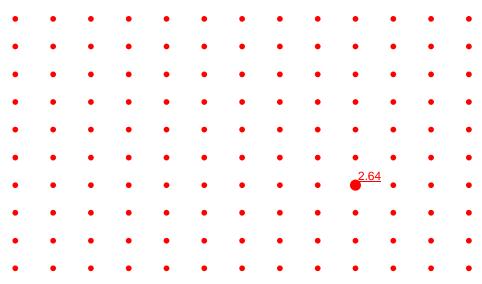
Phi: 32 °

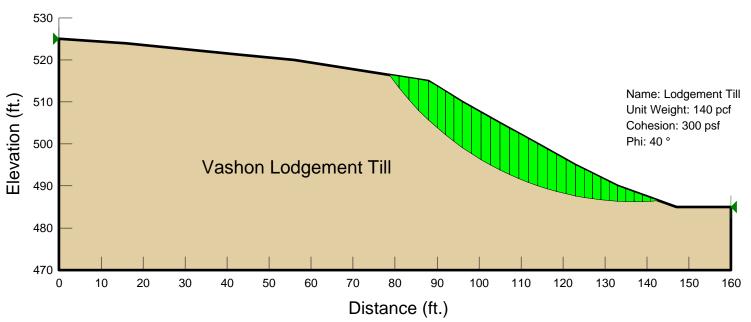
Issaquah High School 180070E001 Existing Conditions B-B'



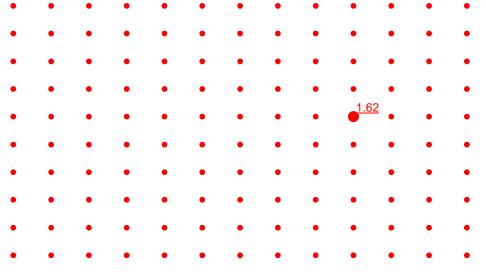


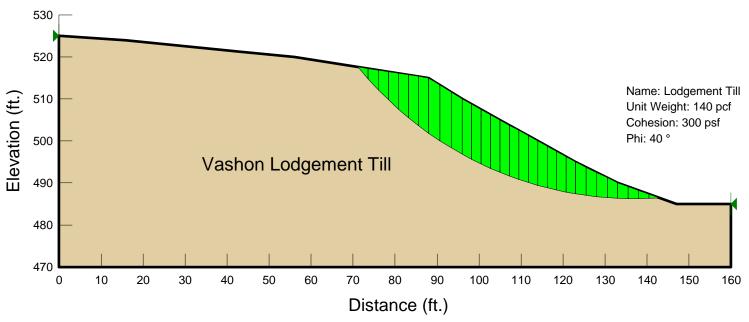
Issaquah High School 180070E001 Existing Conditions B-B' Static





Issaquah High School 180070E001 Existing Conditions B-B' Seismic - 0.26g





Issaquah High School 180070E001 Post-Construction Conditions B-B'

